NOLOGY DEPT.

Gas Journal

Vol. 271. 104th Year. LONDON, AUGUST 6, 1952. No. 4653. Price 1/3
Registered as a Newspaper.

PUBLIC LIBRARY
AUG 1 1952
DETROIT

EXHIBITION OF THE WORKS OF INDUSTRY
OF ALL NATIONS 1851
I hereby certify that Her Majesty's Commissioners
upon the Award of the Jurors have presented a Prize Medal to
T. Glover
for a Gas Meter
shewn in the Exhibition
Exhibition
Hyde Park London 15th Oct.r 1851
Albert
President of the Royal Commission

EACH PROCESS OF MANUFACTURE UNDER EXACT LABORATORY CONTROL

SILICA BLOCKS AND BRICKS

FOR
GAS WORKS,
COKE OVENS,
CHEMICAL WORKS,
STEEL WORKS
ETC.

Send your enquiries to:-

THE WEST HUNWICK SILICA & FIREBRICK Co., LTD

HUNWICK — WILLINGTON — CO. DURHAM.

Telephone: CROOK 200 (2 lines) *Telegrams: IGNITE, HUNWICK*

DONKIN GAS COMPRESSORS

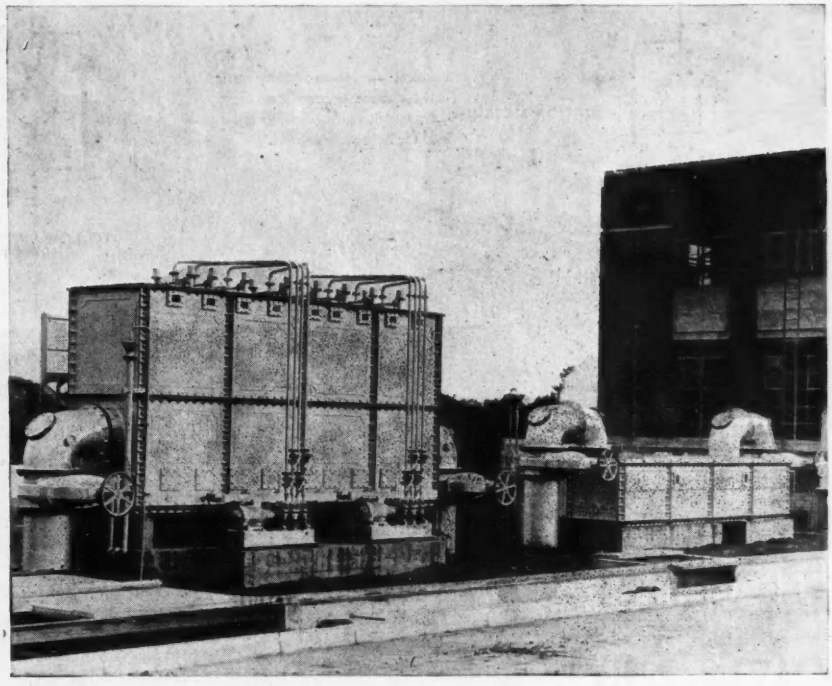
- HIGH SPEED VERTICAL RECIPROCATING TYPE
- AUTOMATIC CONTROL FORCED LUBRICATION
- EASY ACCESSIBILITY TO WORKING PARTS
- PERFECT BALANCE
- CAN BE SUPPLIED DRIVEN BY STEAM, GAS ENGINE OR ELECTRIC MOTOR

The BRYAN DONKIN CO LTD · Chesterfield

LONDON · MANCHESTER · MEMBERS OF THE SOCIETY OF BRITISH GAS INDUSTRIES

Progressive plant for the Gas Industry

The hallmark of high quality plant



WASHING PLANT

by

The accurate assessment of GAS WASHER PERFORMANCE requires intelligent application of chemical engineering principles, on the basis of reliable fundamental data.

The work of our Chemical Engineers in the field, the interpretation of results by our Research and Development Department, and the engineering skill of our Draughtsmen enable us to offer designs for MULTI-STAGE WASHING PLANT for the most stringent duty.

Why not take advantage of the facilities we offer?

We make :—BY-PRODUCT PLANT · CONDENSERS · DETARRERS · GASHOLDERS · GAS VALVES and CONNECTIONS · IRON CASTINGS TRAY and other PURIFIERS · STILLS · TANKS · WASHERS · WATER GAS PLANT · RIVETED and WELDED STEELWORK · etc.

R. & J.

DEMPSTER

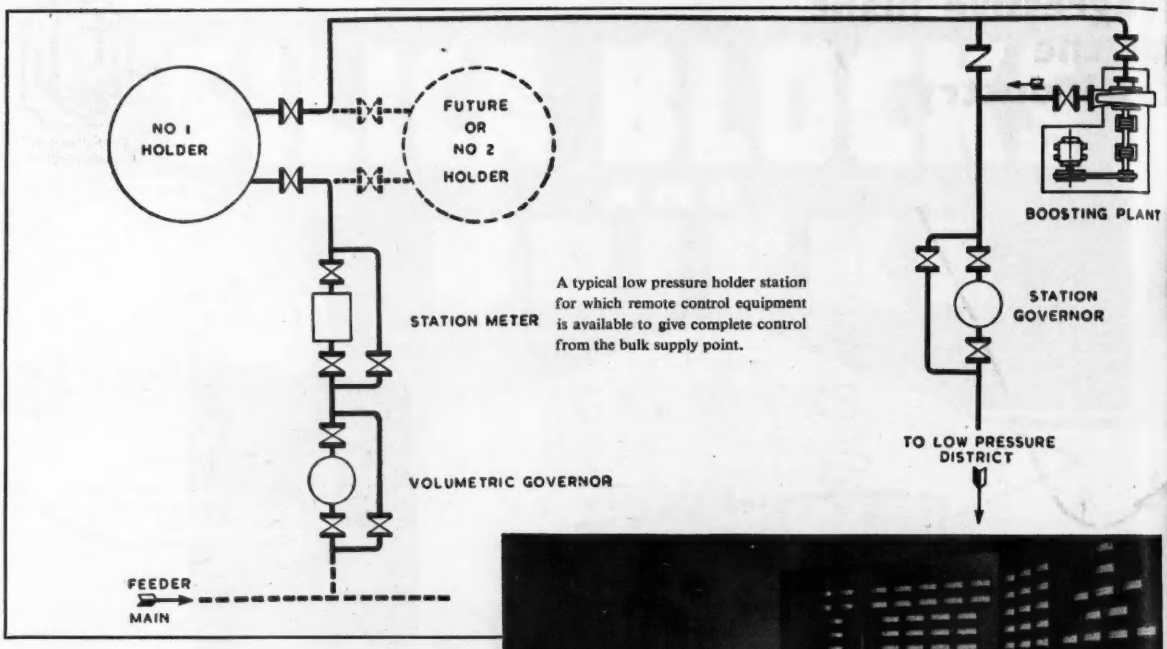
Ltd.

Constructional Gas & Chemical Engineers

GAS PLANT WORKS - NEWTON HEATH

MANCHESTER - 10

London Office : 34 Victoria Street, S.W.1



A typical low pressure holder station for which remote control equipment is available to give complete control from the bulk supply point.

HOW THE *problems* OF BULK GAS SUPPLY CAN BE *solved* BY REMOTE CONTROL

Equipment is now available which enables the engineer in charge at a central point of a complete distributive network to exercise remote control. The control system is so designed as to ensure that *every* station is supplied with an adequate amount of gas at times when a particular load has to be met. Plant and mains are operated as near 100 per cent load factor as possible. Peak demands on feeder mains can be minimised and the plant operated at fullest efficiency throughout every 24 hours. The suite of panels shown above provides remote control indications and meter readings for a large undertaking. With certain exceptions, attendants are not required at the remote stations. It will be evident that the control engineer has before him a schematic diagram of the distribution system giving complete "up-to-the-minute" information. Please write for further details.

Supervisory Remote Indication and Control Equipment

AUTOMATIC TELEPHONE & ELECTRIC CO. LTD.

STROWGER HOUSE, ARUNDEL STREET, LONDON, W.C.2

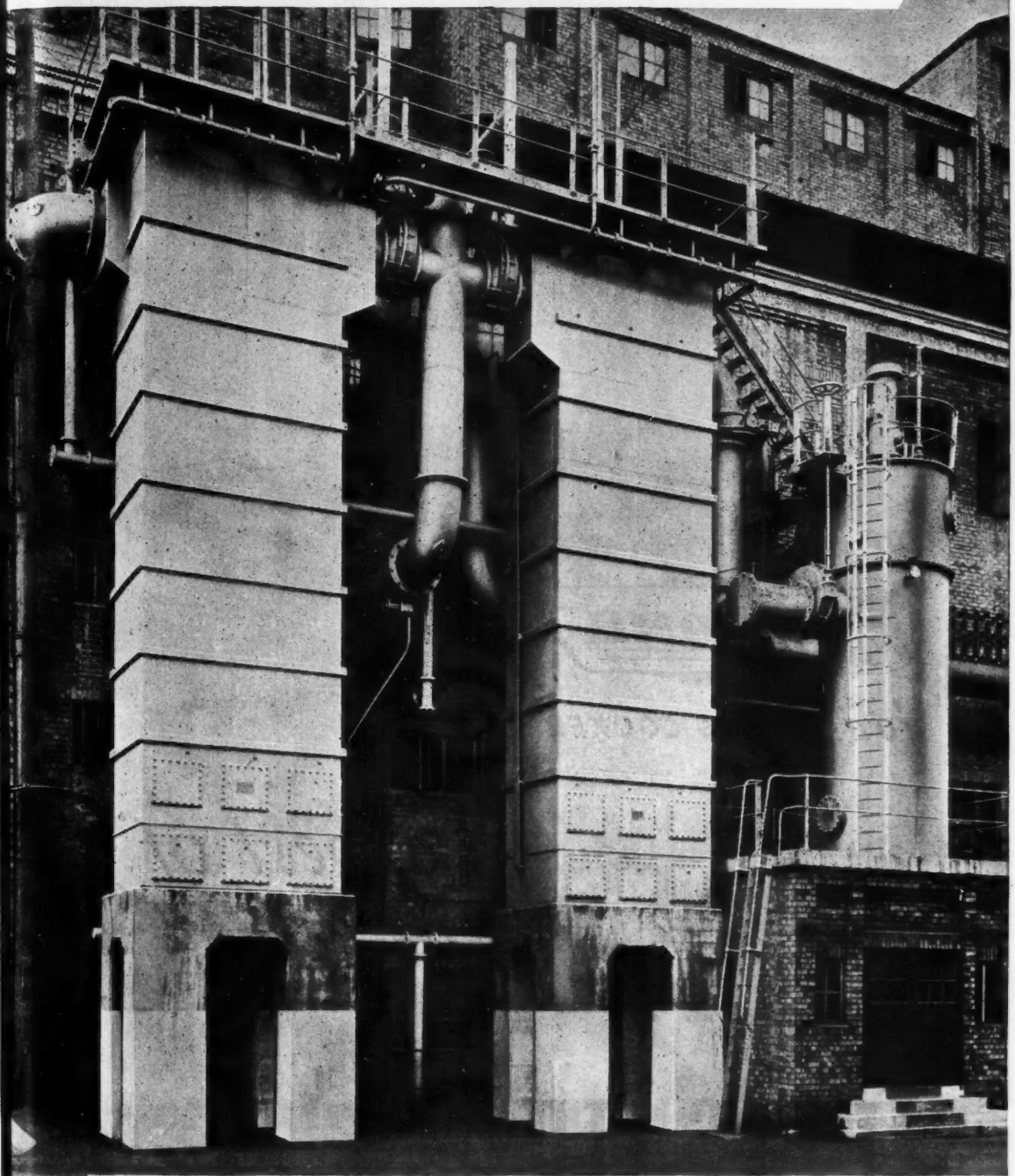
Telephone: TEMple Bar 4506. *Telegrams:* Strowger, Estrand, London.

STROWGER WORKS, LIVERPOOL, 7

A.437I-A23

MORE WHESSOE PLANT AT WANDSWORTH

Vertical Tube Condensers and W.W-D. Electro-Detarrer at South Eastern Gas Board, Wandsworth Works. This plant built to the order of the Woodall-Duckham Company, is for 5.3 Mill. cu. ft. I.V.C. gas per day.



WHESSOE | DARLINGTON

LONDON OFFICE · 25 VICTORIA ST. S.W.1

W/RP/021

FOR THE "GLORIOUS" TWELFTH

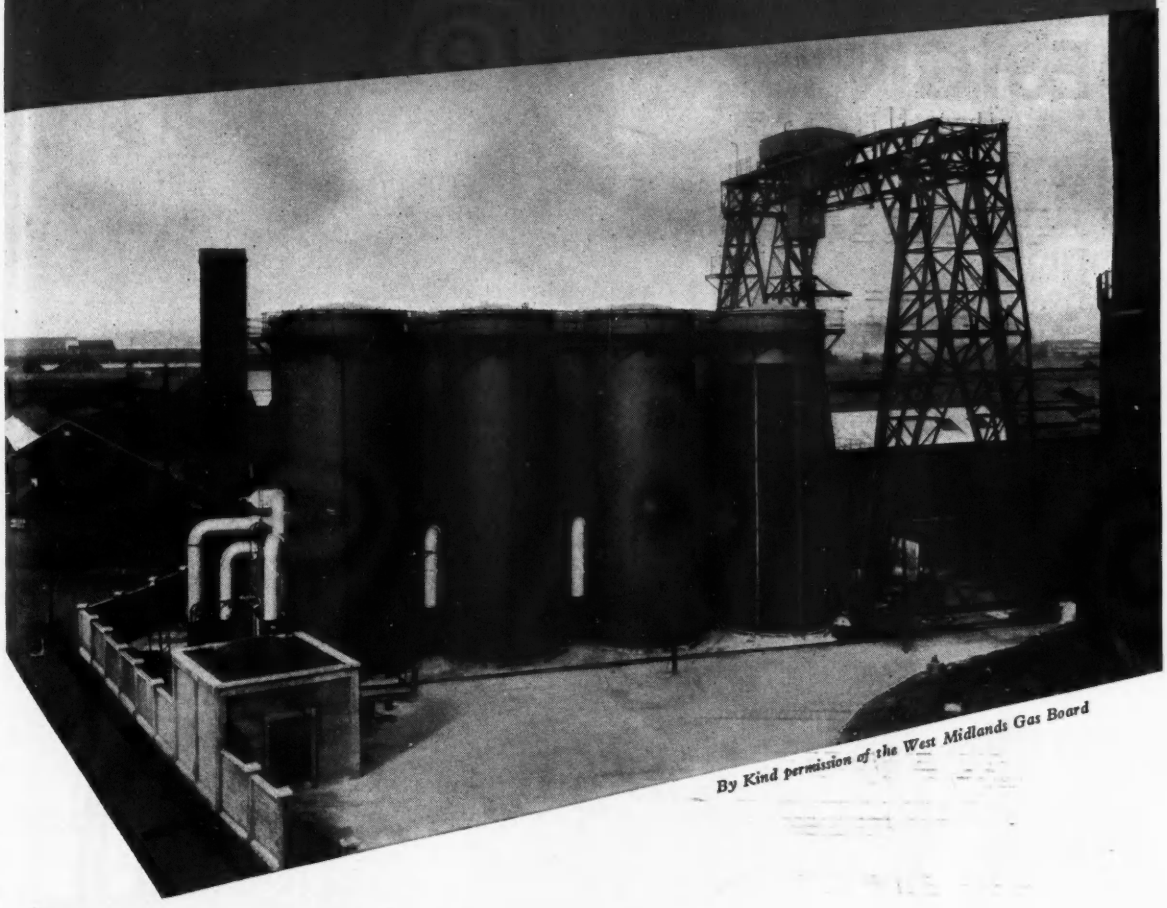
THE NEWHOME MODERN GAS COOKER

"the best of any brace"

STOVES LTD RAINHILL·LIVERPOOL

LONDON OFFICE
91 FARRINGDON ROAD E.C.1

TOWER PURIFIERS



By Kind permission of the West Midlands Gas Board

A tight corner . . .

The Tower Purifiers above are installed on a long, narrow site between a Gasholder and the Works boundary. The Towers are placed at one end of the site. A covered space at the other end, with plant for mechanical loading and mechanically assisted unloading of containers, ensures smooth and easy handling of oxide.

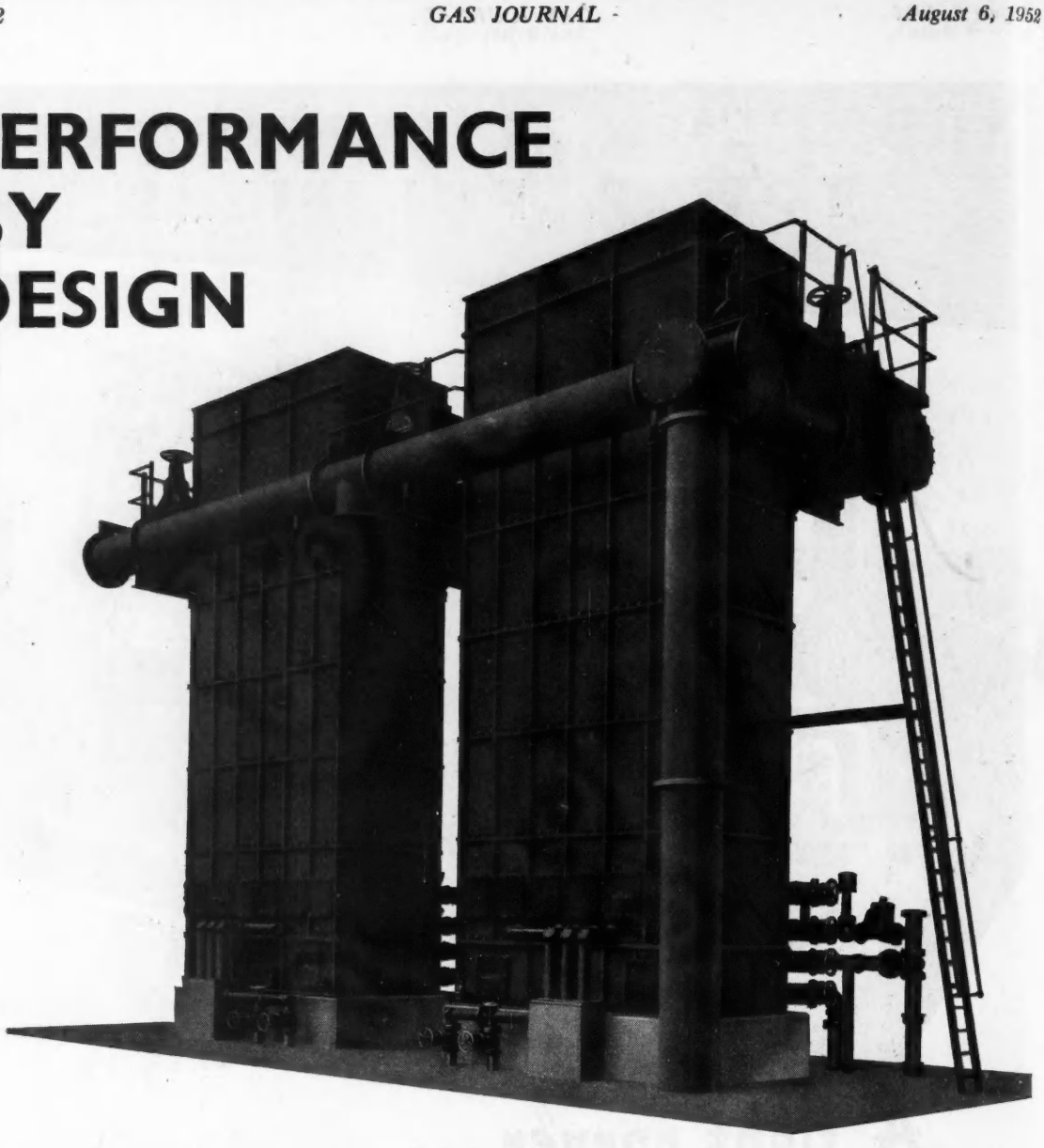
W. C. HOLMES & CO. LTD.

HUDDERSFIELD · LONDON · BIRMINGHAM

FOUNDED 1850 HOLMES HUDDERSFIELD

Tel: Huddersfield 5280 London: Victoria 9971 Birmingham: Midland 6830

PERFORMANCE BY DESIGN



CONDENSERS BY CLAPHAMS

Vertical Multi-Pass Type — 5 Million Cu. Ft. Per Diem

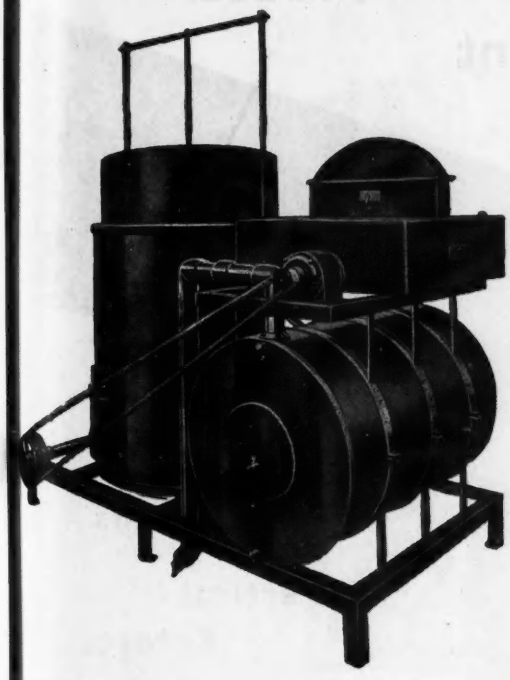
- **Scientifically designed to suit individual conditions.**
- **Cast iron or steel constructions.**
- **Vertical or horizontal types.**
- **Our services are at your disposal.**

CLAPHAM BROS. LIMITED

MAKERS OF GAS WORKS EQUIPMENT SINCE 1837

KEIGHLEY-YORKS - Tel: 2787-2788 - Grams: Clapham Bros. Keighley

AEROGEN GAS GENERATORS



PETROL AIR: 300 B.T.U. per cubic foot
PRODUCER AND PETROL COMBINED: 480 B.T.U. per cubic foot

Suitable for Domestic Commercial and Industrial Appliances at Home or Abroad where Town's Gas is not readily available.

Outputs of Plants Range from 100 Cubic Feet to 15,000 Cubic Feet per hour

Full technical information can be obtained from:

THE AEROGEN CO. LTD.,
ALTON, HAMPSHIRE, ENGLAND

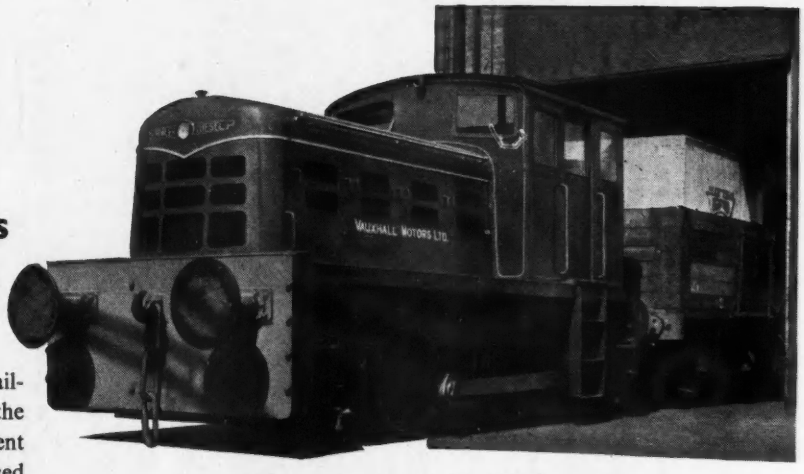
Telegrams: Aerogen, Alton, Hants. *Telephone: Alton 2081*

One of the 150 h.p.

FOWLER

Diesel Locomotives

at Vauxhall Motors Ltd. Luton



THIS 150 h.p. supplies instantly available motive power. It provides the quick and efficient wagon movement which is a pre-requisite for increased overall productivity.

FOWLER LEEDS

DIESEL LOCOMOTIVES

In rail gauges from 2 ft.—5 ft. 6 ins.

Information and literature from

John Fowler & Co. (Leeds) Ltd., Leeds, Yorks.

Telephone: Leeds 30731 (10 lines)

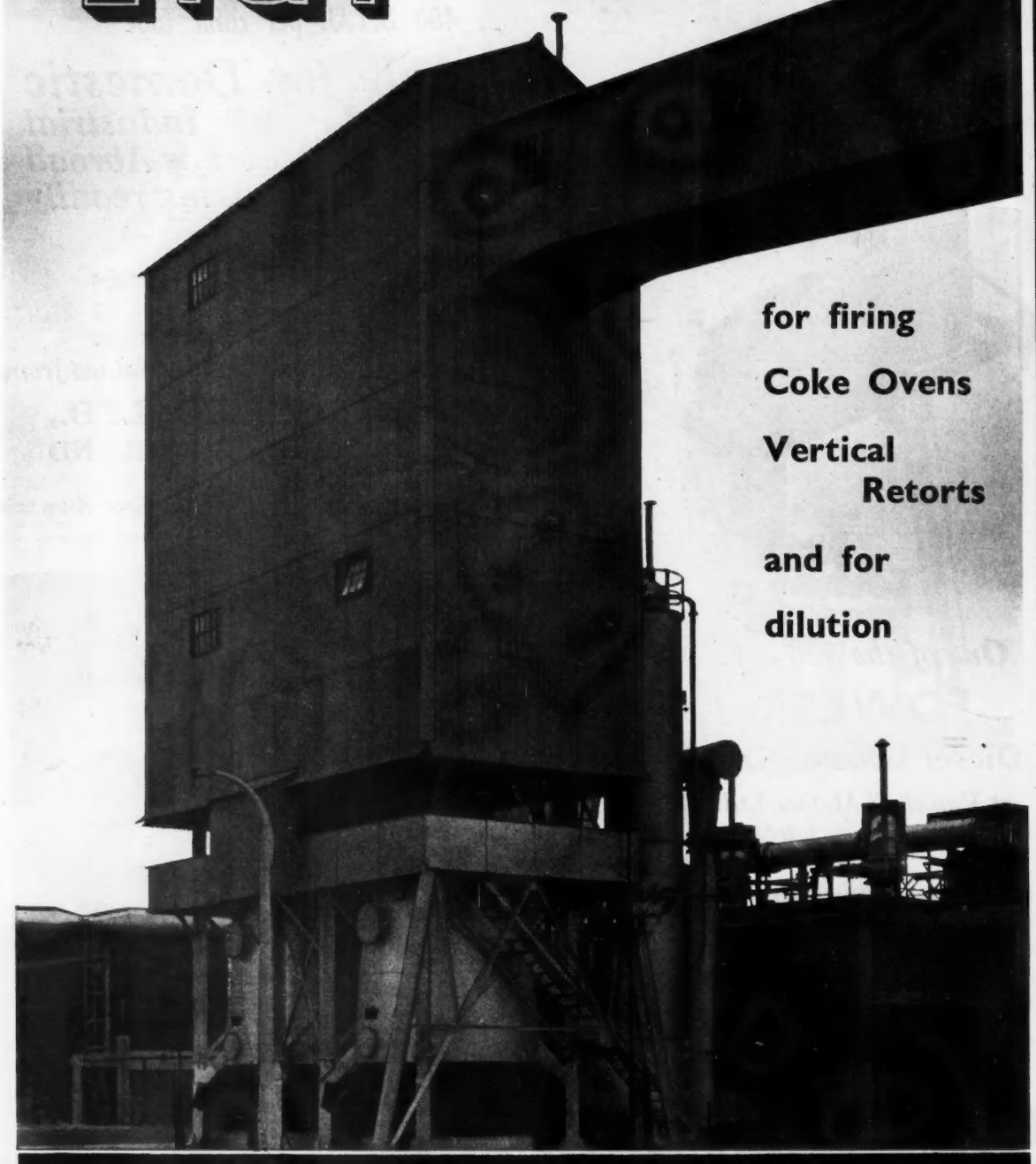
A PRODUCT OF THE MARSHALL ORGANISATION, GAINSBOROUGH, ENGLAND.

Some users of Fowler Diesel Locomotives

Anglo-Iranian Oil Co. Ltd., Llandarcy.
Associated Portland Cement Manufacturers Ltd.
Barrow Ironworks Ltd., Barrow-in-Furness.
Boots Pure Drug Co. Ltd., Nottingham.
British Aluminium Co. Ltd.
British Electricity Authority.
British Railways.
Cargo Fleet Iron Co. Ltd., Middlesbrough.
Cerebos Ltd., Co. Durham.
Colvilles Ltd., Motherwell.
Edward Curran & Co. Ltd., Cardiff.
Joseph Crosfield & Sons Ltd., Warrington.
Dorman, Long & Co. Ltd., Middlesbrough.
Enderby and Stoney Stanton Granite Co. Ltd., Nr. Leicester.
Fisons Ltd., Immingham and Avonmouth.
John Garrington & Sons Ltd., Bromsgrove.
Guest, Keen and Nettlefolds Ltd., Cardiff.
Richard Hill Ltd., Middlesbrough.
Imperial Chemical Industries Ltd,
Richard Johnson & Nephew Ltd., Manchester.
Michelin Tyre Co. Ltd., Stoke-on-Trent.
National Coal Board.
Nitrogen Fertilizers Ltd., Nr. Scunthorpe, Lincs.
North Bitchburn Fireclay Co. Ltd., Darlington.
North Devon Clay Co., Torrington.
North Eastern Gas Board.
Pressed Steel Co. Ltd., Cowley, Oxford.
"Shell" Refining & Marketing Co. Ltd.
Shell-Mex and B.P. Ltd.
Southern Oil Co. Ltd., Manchester.
The Steel Company of Scotland Ltd., Glasgow.
Thomas Summerson & Sons Ltd., Darlington.
Thames Board Mills Ltd., Purfleet.
Richard Thomas & Baldwins Ltd., Ebbw Vale & Swansea.
Vauxhall Motors Ltd., Luton.
West Midlands Gas Board, Stoke-on-Trent.
Whitehead Iron & Steel Co. Ltd., Newport, Mon.

P.G.

Mechanical Producer Gas Plant



for firing
Coke Ovens
Vertical Retorts
and for
dilution

THE POWER-GAS CORPORATION LTD.

STOCKTON-ON-TEES AND LONDON
CANADA AUSTRALIA FRANCE INDIA AND SOUTH AFRICA

A symbol of Progress

STOKE-on-TRENT

VIS UNITA FORTIOR

A symbol of Service

GEORGE ORME & Co. OLDHAM & GLASGOW

Meters Ltd 51 KING ST., MANCHESTER & Tel. BLA. 0387 (2 lines)

Controlling J & J BRADDOCK, GEORGE ORME & COMPANY, SAWER & PURVES

dm MS 1

BOOTH WELDED BULK STORAGE TANKS

INDIVIDUAL TANKS UP TO 2,000,000 GALLONS CAPACITY

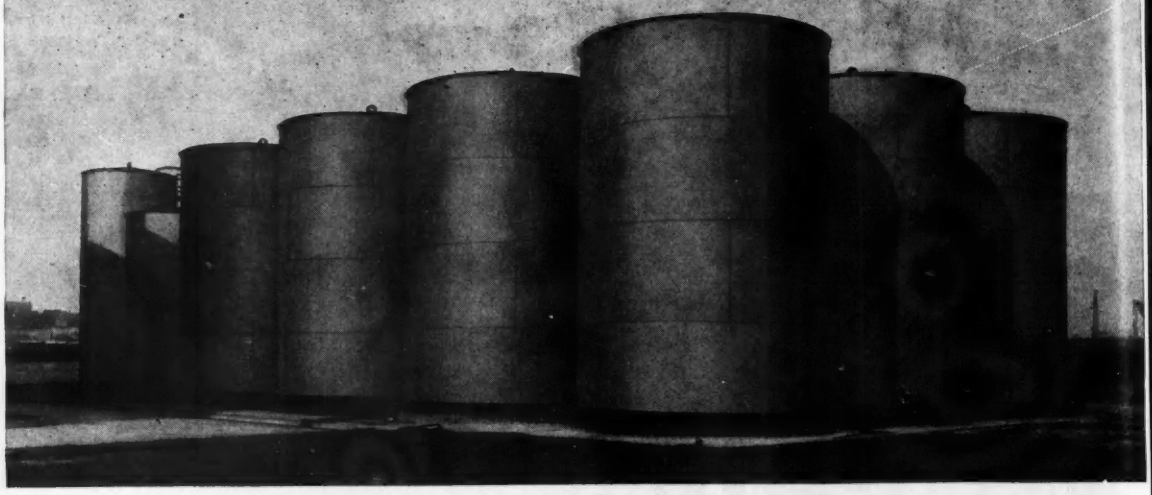
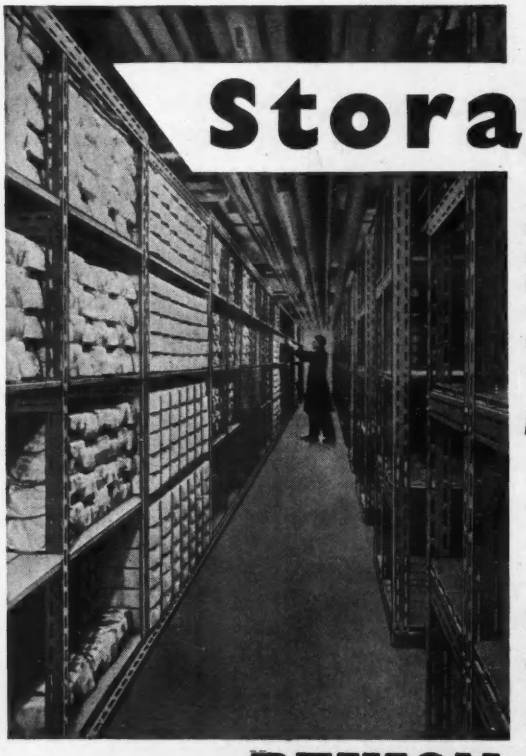


Illustration shows Outside Storage Tanks for Thos. Hedley & Co. Ltd., Trafford Park, Manchester

JOHN BOOTH & SONS (BOLTON) LTD., HULTON STEELWORKS, BOLTON. Telephone: 1195

LONDON: 26, VICTORIA STREET, WESTMINSTER, S.W.1 Telephone: ABBey 7162



Storage Racks

Everywhere Dexion is cutting equipment costs. These storage racks, for example, are made entirely from this remarkably versatile material. Conveyors, trolleys, machine guards, and a hundred other structures can be made — exactly to your own needs, in a few hours, without waste, by unskilled labour on the spot. You save time, space and money. That's why Dexion is used by firms like Bristol Aircraft, I.C.I., G.E.C. — and 20,000 others.

Build your own equipment with

DEXION

SLOTTED ANGLE

★ **Can be used over and over again**

★ *No drawings required—rough sketches are good enough*
No drilling, welding, measuring or painting. No scrap

★ **Just cut it and bolt it, that's all!**

Write or telephone for illustrated booklet S15

Telephone: REGent 4841 **DEXION** LTD., TRIUMPH HOUSE, 189 REGENT ST., LONDON, W.1

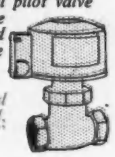
Canute had nothing on us

Only yesterday (it seems to us) Canute's attempt to do something of this kind was such a signal failure that it set us wondering whether we could not do better. Less than a thousand years later we produced the Magnetic Valve which *will*, we proudly claim, keep most liquids under perfect control without the aid of driving shafts, glands, stuffing boxes or other charms and incantations. Hot air and other gases are also very much within our power—in fact here comes a Magnetic Valve to shut *us* off! We'll save ourselves by his example and 'fail to safety'.

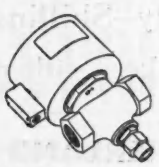
Send for descriptive brochure showing the full range of Magnetic Valves up to 12" orifice for AUTOMATIC or REMOTE control of water, steam, coal gas, oil, air and other industrial liquids and gases. *Special valves designed if required. Standard valves delivered ex-stock.*

MAGNETIC "P" TYPE HIGH PRESSURE STOP VALVE

This valve is of the shut-off pattern and is suitable for passing water, air, saturated steam, oil, and gas at pressures from 10 to 250 lbs. per sq. in. The valve is of the pressure operated type, the solenoid operating a small pilot valve controlling the flow to the main valve which is opened by the pressure of the medium under control.



"A Flameproof solenoid housing, Buxton Certified, can be fitted where required"



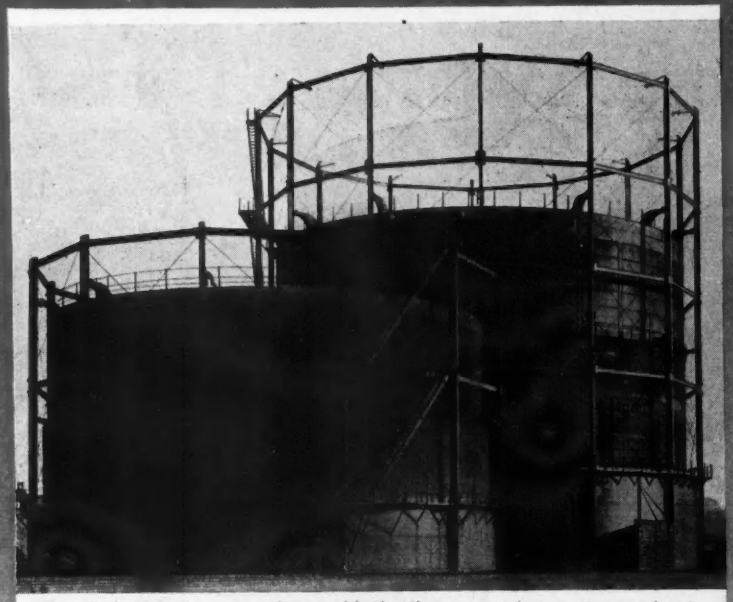
THE

magnetic valve co.

LIMITED

28 ST. JAMES'S PLACE, LONDON, S.W.1 · TELEPHONE: REGENT 7588

(Manufacturers of Automatic Valves for over 20 years)



Two Gasholders (quarter-million and half-million capacity) recently completed

GASHOLDERS

GUIDE FRAMED
SPIRAL
WATERLESS
HIGH PRESSURE
REPAIRS AND
INSPECTION

80 Years Experience

UNEQUALLED SERVICE

GASHOLDERS & TANKS
OF ANY SIZE AND DESIGN
RIVETTED OR WELDED

CLAYTON SON & CO., LTD.
HUNSLET, LEEDS, 10.

"A.G.S."

A Sure Indication for the Future . .

Gas Meters

Ordinary or Single Coin Prepayment.
A.G.S. Optional Two Coin Attachment
for Sixpence—Shilling
Penny—Shilling
One Slot takes either Coin.

A. G. SUTHERLAND LTD.
WARWICK RD., GREET, BIRMINGHAM, 11.
And at LONDON and NOTTINGHAM

discuss your finishing needs here

Here you can get expert technical advice on every aspect of spray finishing. You can examine at any time the latest in spray guns, air compressors, and every other component of modern industrial finishing plant. Visit the new DeVilbiss-Aerograph Showrooms on Holborn Viaduct — the finest permanent display of spray equipment in Europe — or, if more convenient, come to any of our provincial showrooms. You are invited to call and make use of this service as often as you wish.

DeVilbiss AEROGRAPH showrooms

Atlantic House, 47 Holborn Viaduct, London, E.C.1

THE SYMBOL OF SERVICE

If you cannot visit London, there are DeVilbiss-Aerograph Showrooms at the following centres:—

BIRMINGHAM · BRISTOL · GLASGOW · MANCHESTER

THE AEROGRAPH CO. LTD., head office: LOWER SYDENHAM, S.E.26. telephone: SYDenham 6060

T.A.4575

Roots Type

GAS BOOSTERS

Flows from 60-210,000 cu. feet per hour can be handled at delivery pressures up to 10 p.s.i. from boosters in the "Marshall" series.
Special sealing ensures that contaminating gases may be displaced without leakage. Delivery of oil-free gas is guaranteed.

GODFREY
SIR GEORGE GODFREY & PARTNERS (INDUSTRIAL) LTD.

Sir George Godfrey & Partners (INDUSTRIAL) **Limited**
HAMPTON ROAD · HANWORTH · MIDDLESEX · ENGLAND
Tel.: FELtham 3291/5 (Head Office & Works). FELtham 4037/8 (Sales & Publicity), The Grange, The Air Park, Feltham, Middlesex.
Overseas Companies: MONTREAL · JOHANNESBURG · MELBOURNE

Eliminate constantly burning by-passes

and reduce Public Lighting costs by installing Newbridge 'Comets'

In these difficult times all Public Lighting Engineers are faced with the question of providing up-to-date automatic lighting control and, at the same time, keeping maintenance costs to an absolute minimum. HORSTMANN GAS CONTROLLERS AND COMETS provide the answer to this problem. They are well known for their reliability and the economies which can be effected by their use merit the attention of all connected with public lighting.

Most by-passes burn at least ½ cu.ft per hour
'Comets consume less than 1 cu.ft. per year

a HORSTMANN product

'Comets' eliminate the need for constantly burning by-passes and the savings effected by their use will soon offset the initial installation cost. The type 3A/UNI Controller with MK. IX. 'Comet,' as illustrated, represents an ideal unit for the automatic control and ignition of upright type lamps.
Send today for full details.

The HORSTMANN GEAR CO. LTD.
NEWBRIDGE WORKS · BATH · ENGLAND · TEL: 7241 GRAMS. HORSTMANN BATH

The Harvest of the Horizons

"Development of export trade has been almost a passion with us and remains so": the Chairman spoke for every member of Bell's Group of Companies (Ronald Trist's, W. N. Baines', Miller Insulation and Engineering are included) at the Annual General Meeting recently held at Slough. "It is no exaggeration," he added, "that Asbestos in Industry is only in early promise of youth."

At Slough and Rotherham and on Clydeside and through our Branches everywhere runs a joyous eagerness; the whole heart is young. World penetration with the finest of British products and workmanship is our policy. At home our experience grows in the solving of engineering problems, particularly those relating to the conservation of heat and energy, an essential service if Britain is to be more keenly competitive in excellence and in price. The demand for our counsel and equipment never abates. But we also keep our eyes on the horizons. Established in Australia, in South Africa, in India and Malaya, in Southern Rhodesia, we have "a comprehensive and lively network of agents. . . . We are in living touch with the world." The exact knowledge and meticulous skill directing our efforts are confirmed by the fact that of twenty-four directors on the Boards of the various Companies in the Group only three are not full-time servants. Intense and restless in the study of markets new and old, far and near, and of manifold problems and needs as touching insulation in all its phases on land and sea and in the air, we continue to announce with a crescendo of emphasis, as our chairman did, that our resources in applied science and technology are ready at hand for who so seeks. We desire to help others to reap the harvest of the horizons; the spirit of adventure never sleeps.

Always ring Bell's

BELL'S ASBESTOS AND ENGINEERING LIMITED
BESTOBELL WORKS, SLOUGH, BUCKS.

(Phone SLOUGH 25151)

25 Branches

(12 in the Dominions)

THE SIMON PATENT AUTOMATIC COKE WEIGHER

Approved by the Board of Trade and stamped by the Weights and Measures Authorities.

Capacity: 28 to 112 lbs. per discharge (nett).

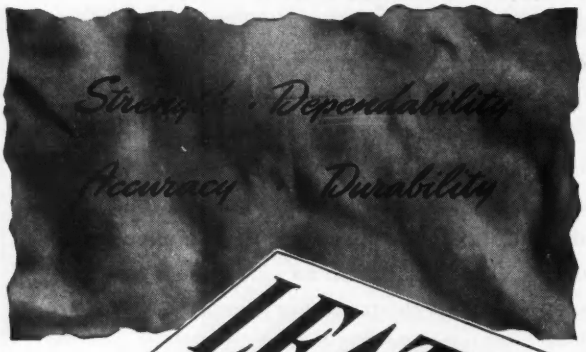
Speed of Weighing: Up to six weighings per minute.

Guaranteed accuracy and continuity of operation.

Machines may be seen working by appointment.

RICHARD SIMON & SONS LTD.

PHOENIX WORKS · BASFORD · NOTTINGHAM



LEATHERS

FOR THE GAS INDUSTRY

DIAPHRAGM & GENERAL LEATHER CO. LTD.

FRANKLIN ROAD WORKS · PORTSLADE · SUSSEX

Telephone: HOVE 47266/7

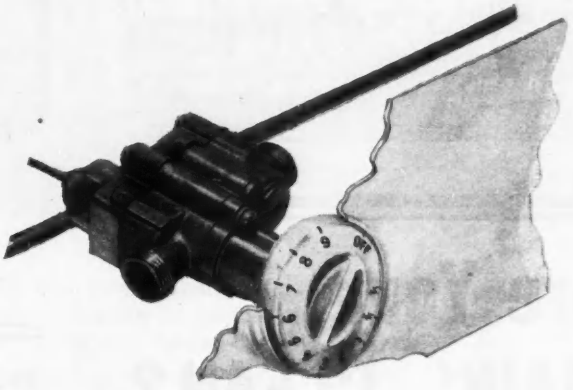
Telegrams: DIAPHRAGM, PORTSLADE

EUROPE'S LARGEST PRODUCERS OF AUTOMATIC CONTROLS

The advantages of large scale research and manufacture, brought about by the fact that the Teddington organisation is the largest of its kind in Europe devoted solely to the production of automatic controls, are reflected in the wide range of Teddington control equipment which is available for all normal requirements . . . in the very competitive prices and in the constant development of new and improved instruments.
Typical examples shown here.

THE Teddington CAPILLARY TYPE GAS COOKER THERMOSTAT

The Combined Teddington Cooker Thermostat has been pioneered by The British Thermostat Company and developed over a period of many years to meet the requirements of cooker design. It overcomes all restrictions of positioning by enabling the most satisfactory location for the sensitive element to be determined without regard to the valve unit which can be mounted to suit the styling of the cooker. No compromise, no hit-and-miss— but spot-on regulation of any oven temperature. This effective thermostat is already a standard fitting in the de la Rue B6 and G5, the Raymond, and the Cannon A.125 gas cookers.

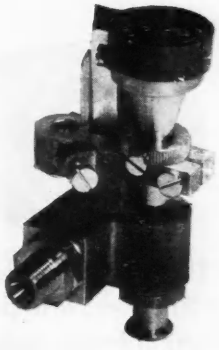


ABSOLUTE SAFETY FOR A MATTER OF SHILLINGS

Type TJ—a low-priced automatic safety device—gives quick, complete flame cut-off if the pilot or gas supply should fail. Easy resetting by hand. Alternative jets for town and bottled gas. Used for almost any industrial gas-fitted installation.

ABSORPTION REFRIGERATOR CONTROLS

A special thermostatic gas valve and burner for absorption refrigerators—made in two models for town and bottled gas respectively. Wide temperature range, accurately controlled by sealed capillary system. A safety device in the burner cuts off all gas if the flame or supply fails.



Teddington AUTOMATIC CONTROLS

THE BRITISH THERMOSTAT CO. LTD., SUNBURY-ON-THAMES, MIDDLESEX
Telephone : Sunbury-on-Thames 456

Metolite
REGD.
LIGHTER FLINTS

FOR
AUTOMATIC IGNITION
OF
DOMESTIC COOKERS
GAS REFRIGERATORS, FIRES, ETC

SUPPLIES OF ALL TYPES NOW AVAILABLE TO PUBLIC UTILITIES

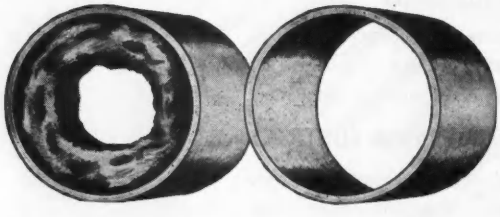
ESTD. 1928
BRITISH FLINT & CERIUM MANUFACTURERS
LIMITED
TONBRIDGE · KENT
'PHONES: TONBRIDGE 2753 & 2970 'GRAMS: "BRITFLINT" TONBRIDGE
London Offices: 8, SPRING GARDENS, TRAFALGAR SQUARE, S.W.1
'PHONE: WHITEHALL 1357 CABLES: "CERIDE, LONDON" 'GRAMS: "CERIDE, PARL, LONDON" CODES: BENTLEY'S SECOND
(CONTRACTORS TO H.M. GOVERNMENT)

USE CHROME GRILL FRETS

Available for all types of Gas Cookers

H. B. DREW LTD.,
Bideford Avenue, Perivale, Greenford, Middlesex.
Telephone - Perivale 3238

• Are Your
• MAINS CLEAN?



The Horizontal Boring Method employed is 100% effective in cleaning mains, a considerable length being treated at one time with hardly any interruption to the supply of gas.

Full information from

GENERAL DESCALING CO. LTD.
289, HANOVER STREET, SHEFFIELD 3
Phone : Sheffield 21202-3 *Telegrams : Descaling, Sheffield 3*

M & M PATENT METER LOCKS

use the STRONGEST, SAFEST METER LOCK

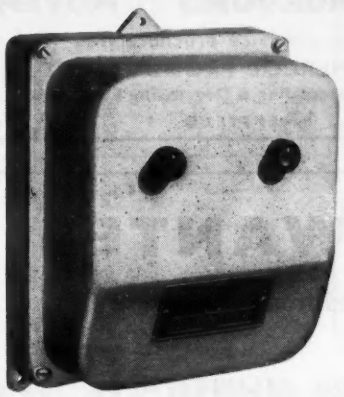
- **DON'T** buy locks you may have to scrap in a few years
- **DON'T** look only at the initial cost
- **DON'T** think only of the present time; look to the future
- **DO** remember that good quality is cheapest in the long run
- **DO** take our word for it that our workmanship is consistently good
- **DO** profit by others' experience and use M. & M. Locks to protect your meters

H. MITCHELL & CO.
36, 38, NEW CHARLES STREET, LONDON, E.C.1

flame failure protection

by ELCONTROL LTD

TRADE MARK



FS4 Relay Control Unit, provides immediate fuel cut-off on flame failure by closing main gas valve; built in "flame" and "no flame" indicator lamps. For use with push button operated spark ignition systems having both automatic main and pilot gas valves.

Price **£20.15.0**

FS2 Relay Control Unit, provides immediate fuel cut-off on flame failure by closing main gas valve; will also operate visual and/or audible alarm signal. For use with manual ignition with or without automatic pilot.

Price **£15.0.0**

Standard probe fittings and heat-resisting steel probes, also gas valves and other accessories, supplied to exact requirements.

★ *Full details of this Elcontrol equipment, together with application details for various types of gas burning installations, gladly sent on request.*

For oil burners, photo-electric system FSP is recommended.

THE Elcontrol Furnace Safeguard equipment provides flame failure protection for fully or semi-automatic gas burners, both in initial lighting up and during normal operation.

Using the conductivity of the flame as a link in an electronic control circuit, this Elcontrol system FSC can be used with installations employing a wide variety of ignition arrangements. Two standard control units are available, suitable respectively for manual ignition (type FS2) and push button control with spark ignition (type FS4). These, used with a standard probe fitting, provide a flame failure installation for a reasonable price—of the order of **£20** excluding gas valves.

FULLY AUTOMATIC CONTROL

For gas burning installations where fully automatic ignition programming control is required, a complete Elcontrol control panel type FS5 is in production.

This gives

(a) fully safe automatic ignition on lighting up.
(b) immediate fuel cut-off on running flame failure.
(c) automatic safe re-ignition after flame failure.
(d) automatic lock-out on fault or gas supply failure.

The condition of the system is clearly indicated at all times, and full protection against faults is provided.

Price complete (excluding probes) **£80.0.0**

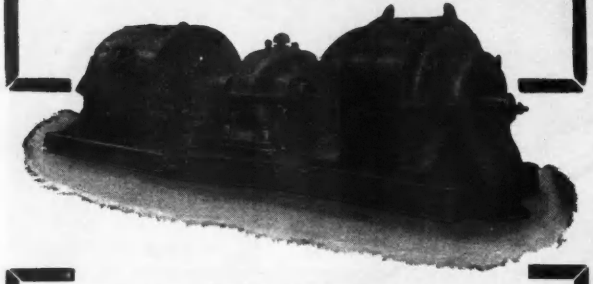
ELCONTROL LTD · 10 WYNDHAM PLACE · LONDON W.1 AMBassador 2671

B

TURBO-COMPRESSORS & EXHAUSTERS FOR AIR AND GAS.

* * *

We build a complete range of Compressors & Exhausters for air and GAS, suitable for all purposes connected with the GAS industry, including Turbo-Compressors for large capacities, as illustrated below.



WRITE FOR PAMPHLET No. 1018 GIVING PARTICULARS—

REAVELL & Co., LTD.,
RANELAGH WORKS, IPSWICH.
Telegrams: REAVELL, IPSWICH Telephone: 2124 & 5.

ONX
The Cements for patching hot retorts
AND ALL TYPES OF FURNACES
Super 83 Brand FIRE CEMENT
A.L.CURTIS & Co
WESTMOOR WORKS. CHATTERIS. CAMBS.

MERCOL PIPE LINE SERVICE FULL BORE

MERCOL
Pipe-line Cleaning Service
Guarantees
FREE FLOW at FULL BORE

We can boost your :-
"UNDERGROUND MOVEMENT"
Service brochure free
MERCOL PRODUCTS LTD.,
Descaling & Degreasing Engineers
EYRE LANE, SHEFFIELD, 1 Tel: 2549

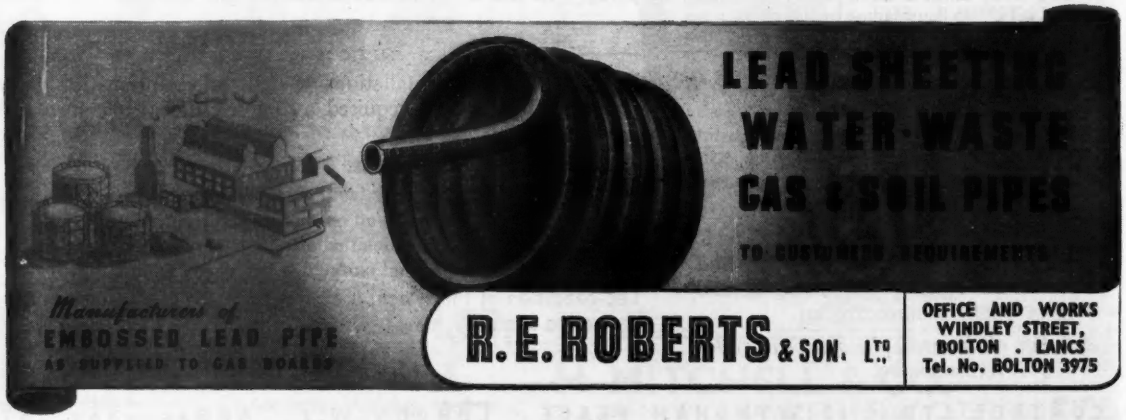
SCRAP GAS METERS WANTED

Top prices paid—Collection arranged from anywhere in U.K.

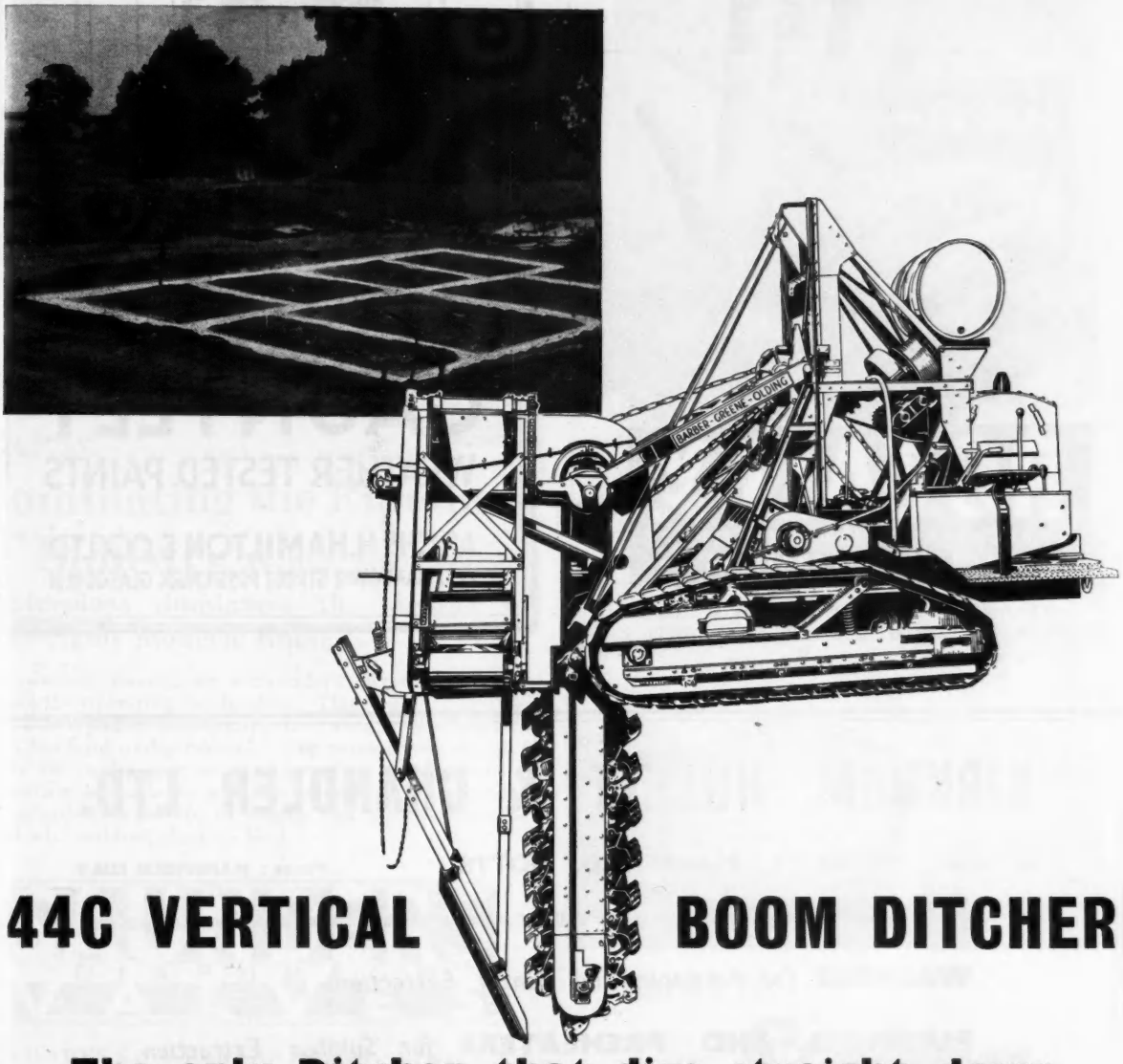
Sell to those best suited to deal with them.

Sell to — MITCHAM SMELTERS LIMITED
Rometal Works, Red House Road,
Mitcham Road ... CROYDON ... Surrey.
Tel: THOrnton Heath 6101. (Private Branch Exchange).

Truck Loads to our own private siding, Beddington Lane, Southern Region.



House footings cut by... **Barber-Greene Olding**



44C VERTICAL BOOM DITCHER

The only Ditcher that digs straight down

● The Vertical Boom of the 44C Ditcher leaves no ramp, and also enables right angles to be cut without hand excavation.

● Fast and manoeuvrable the 44C Ditcher provides low cost trenching of all types, at widths of 18", 21" or 24" to a maximum depth of 8' 3".

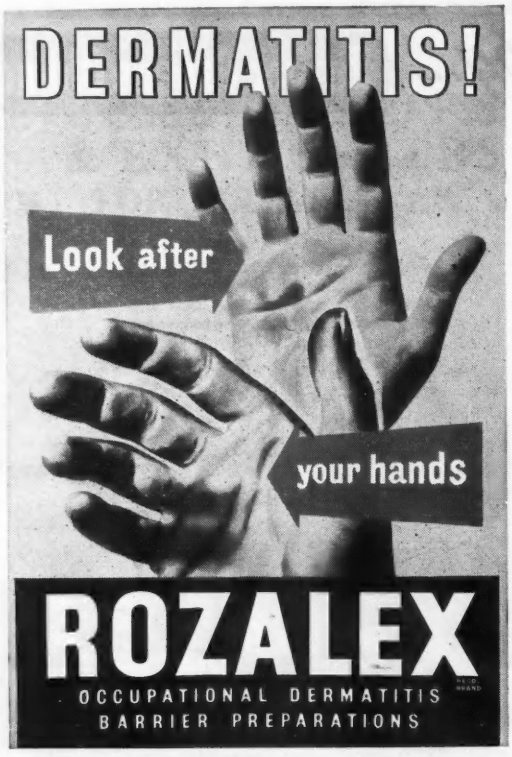
● An Automatic overload release protects the mechanism from damage by underground obstruction. The drive is automatically reset when the obstruction is cleared.

● The illustration shows one of the many house footings cut by a 44C Ditcher at Chignall Estate, Chelmsford, by John Laing and Son Limited.

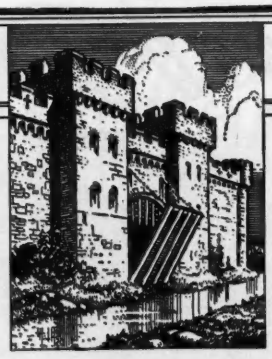
Jack Olding & Co. Ltd. Hatfield, Herts. Telephone Hatfield 2333

SCOTLAND:—JACK OLDING & CO. (SCOTLAND) LTD · COUPAR ANGUS · PERTHSHIRE

77-176



Send for free sample and leaflet "THE SKIN IN INDUSTRY"
ROZALEX LTD., 10 NORFOLK STREET, MANCHESTER, 2



PROTECTION

GAUNTLET

GAUNTLET
WEATHER TESTED PAINTS

ARCHD H. HAMILTON & CO. LTD
27-37 BARDOWIE STREET POSSILPARK GLASGOW.N

KIRKHAM, HULETT & CHANDLER LTD.

UNION FOUNDRY, MANSFIELD, NOTTS. Phone : MANSFIELD 1256/7

WASHERS *for Ammonia and Benzol Extraction*

PURIFIERS AND PREHEATERS *for Sulphur Extraction*

CONDENSERS *for Water Extraction*

●

BENZOL PLANTS and TAR EXTRACTORS

LONDON OFFICE:
STAFFORD HOUSE NORFOLK STREET, STRAND, W.C.2
Phone : TEMPLE BAR 9910. Grams : WASHER, ESTRAND, LONDON

The Dome of St. Peter's, Rome

Dominating the Pipelines of Industry as this Michelangelo masterpiece dominates the skyline of classic and modern Rome

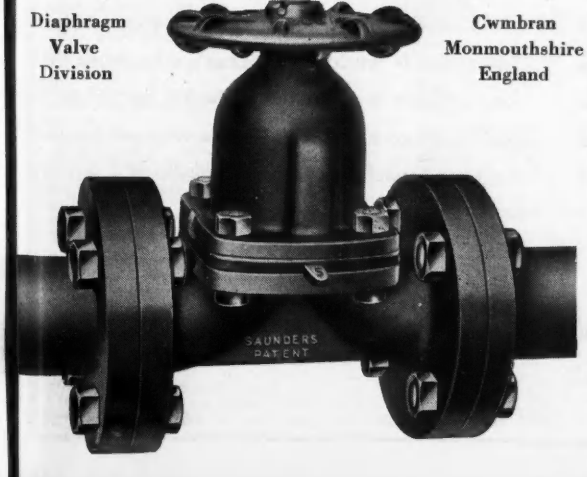
The domed bonnet of a Saunders Diaphragm Valve houses the operating mechanism. This simple, glandless unit, is completely isolated, together with the mechanism, from the fluid under control. For corrosive or abrasive fluids the only part of the Saunders Valve needing protection is the body and this streamlined component is available in a variety of metals and alloys or can be lined with rubber, glass, or lead.

SAUNDERS DIAPHRAGM VALVES

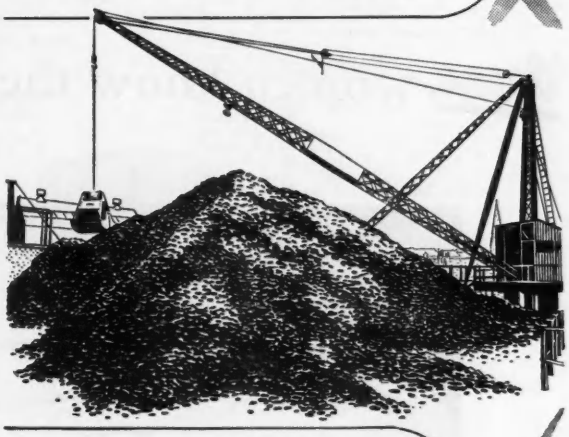
SAUNDERS VALVE COMPANY LIMITED

Diaphragm Valve Division

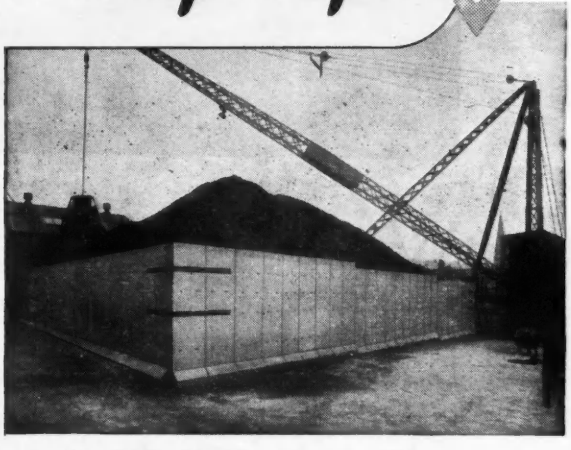
Cwmbran Monmouthshire England



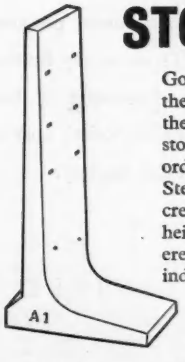
Sixes and Sevens



or Shipshape



—thanks to Stelcon STORAGE WALLS



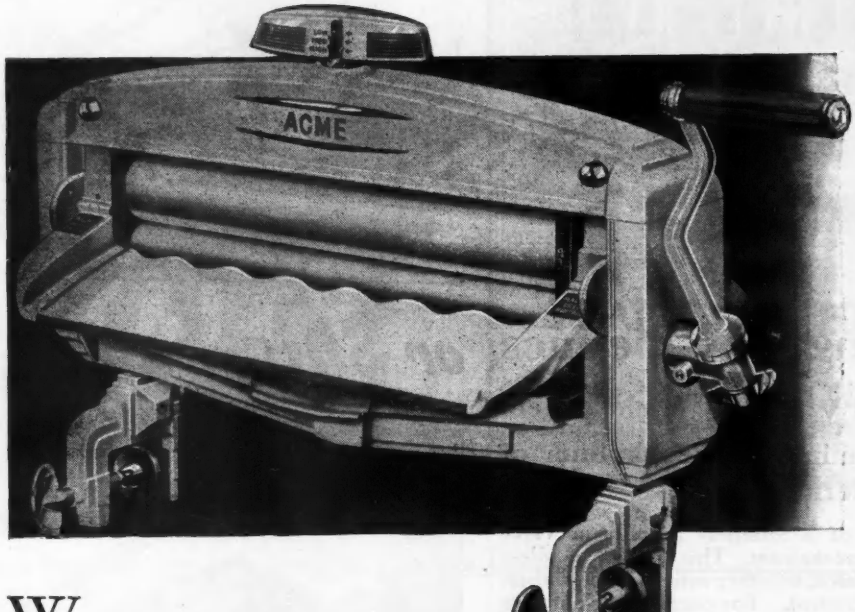
Gone the untidy sprawling heaps, the mixing-in, the carpet losses, the inefficiency, and hard-to-check stocks, and in their place, good order and discipline.

Stelcon Storage Walls, sturdy concrete units, available in four different heights up to 12 feet, are easily erected and moved and are virtually indestructible.

Please write for 1952 illustrated Technical booklet A.4.

STELCON (INDUSTRIAL FLOORS), LTD., Clifford's Inn, London, E.C.4

When washing machines are Acme-fitted **then** women know they're buying the best . . .



WOMEN are buyers of washing machines. Women are buyers of wringers. And when women think of wringers they think of the Acme. So when your machines are Acme-fitted your customers know that they must be, like the Acme, the best on the market.

Seventy years of good, solid British manufacturing, skill, research, and experience stand behind each Acme—and generations of women know this to be true. Acme is the perfect expression of real and continuous progress in the history of wringing. Thus, every feature for which Acme is famous, has sprung from a known need; has been tested, tried and found successful before it leaves the factory.

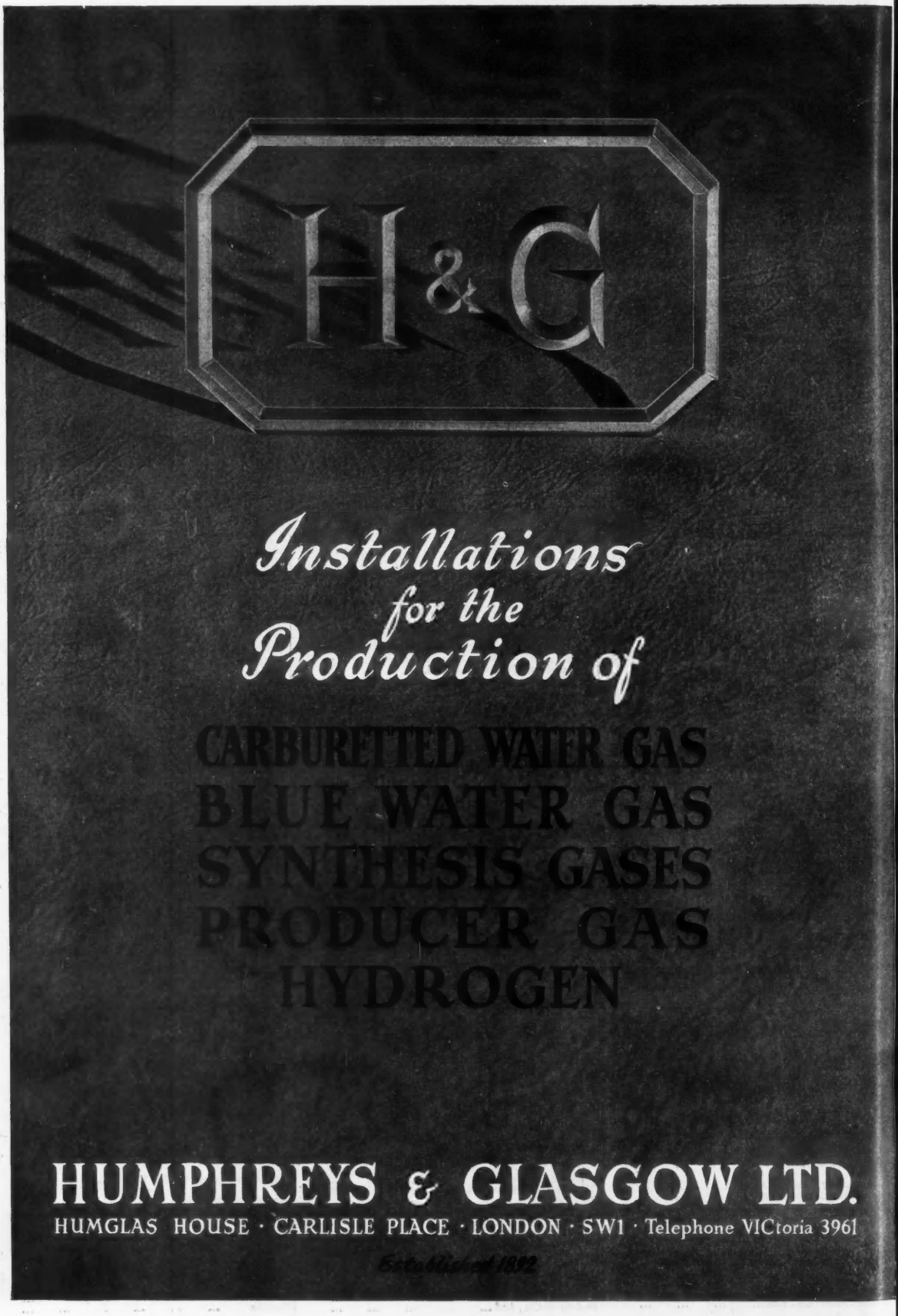
Today the new Acme has "pressure indication", a development which, by assuring the correct pressure for every kind of fabric, takes the guesswork out of wringing. Silks, cottons, woollens, linens, now receive exactly the right pressure needed to extract water, expel embedded dirt and preserve the life of each fabric. Thus wringing is made simpler and easier.

Acme does a better job, lasts longer and gives the best results. That's why Acme's reputation is world wide. That's why more than four million women have chosen an Acme in preference to all others. That's why, when your washing machines are Acme-fitted, women know they're buying the best.

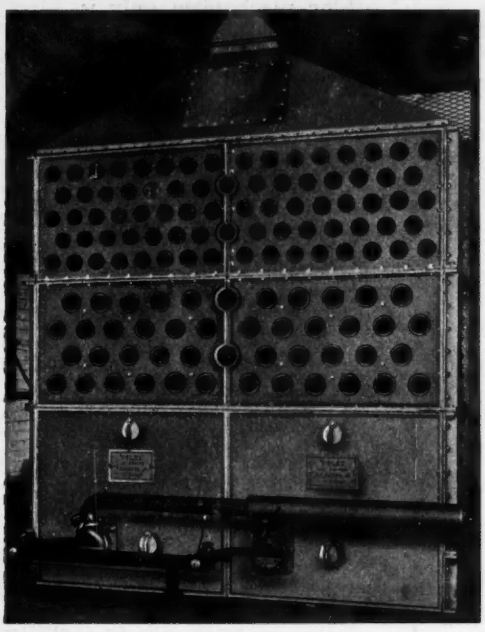
ACME WRINGERS LIMITED DAVID STREET GLASGOW SE

INDEX TO 'JOURNAL' ADVERTISERS

	PAGE
A	
A.C.E. Machinery, Ltd.	
Abbott, Birks & Co., Ltd.	
Accurate Recording Instrument Co.	
Acme Wringers, Ltd.	290
Aerogen Co., Ltd.	273
Aerograph Co., Ltd.	279
Alder & Mackay, Ltd.	
Allan Taylor (Engineers) Ltd.	
Armco, Ltd.	
Armco, Ltd., (Bundy Tubing Division)	
Ascot Gas Water Heaters, Ltd.	
Ascot Gas Water Heaters, Ltd. (F.A. Neat)	
Ashmore, Benson, Pease & Co.	274
Ashworth & Parker, Ltd.	
Aspinall's (Paints), Ltd.	
Associated Lead Manufacturers, Ltd.	
Associated Lead Manufacturers, Ltd. (Rustodian)	
Automatic Telephone & Electric Co., Ltd.	268
Automotive Products, Ltd.	
Averill, C. R., Ltd.	
B	
Bailey, Sir W. H., & Co., Ltd.	
Bale & Church, Ltd.	S5
Balfour, Henry, & Co., Ltd.	
Begwaco Meters, Ltd.	
Bell's Asbestos & Engineering, Ltd.	281
Benham & Sons, Ltd.	
Blakeley, Firth, Sons & Co., Ltd.	
Booth, John & Sons (Bolton), Ltd.	276
Boydell, E., & Co., Ltd.	
Bratt Colbran, Ltd.	
Bray, George, & Co., Ltd.	
Bray, W. E., & Co., Ltd.	S3
Bright, Son & Co. (Clerkenwell), Ltd.	
Bristol's Instrument Co., Ltd.	
British Flint & Cerium Manufacturers, Ltd.	284
British, Foreign & Colonial Automatic Light Controlling Co., Ltd.	
British Furnaces, Ltd.	
British Gas Purifying Materials Co.	
British Industrial Products	S5
British Iron & Steel Federation	
British Oxygen Co., Ltd.	
British Rototherm Co., Ltd.	
British Thermostat Co., Ltd.	283
British Thomson-Houston, Ltd.	
British Tyre and Rubber Co., Ltd.	
British Vacuum Cleaner & Engineering Co., Ltd.	
Broadbent, Thomas, & Sons, Ltd.	
Brockhouse Heater Co., Ltd.	
Broom & Wade, Ltd.	
Brotherhood, Peter, Ltd.	
Brown, J., & Co., Ltd.	S2
Bugden, Thos., & Co.	
C	
Cambridge Instrument Co., Ltd.	
Cannon (Holdings) Ltd.	
Carron Co.	
Cementation Co., Ltd.	
Central Manufacturing & Trading Co. (Dudley) Ltd.	
Chemical Engineering Wiltons Ltd.	
Chemical & Insulating Co., Ltd.	
Cinema-Television, Ltd.	
Clapham Bros., Ltd.	272
Clayton, Son & Co., Ltd.	278
Clifford Engineering Co., Ltd.	
Cochran & Co., Annan, Ltd.	
Cohen, George, Sons & Co., Ltd.	
Collins, Thomas, & Co., Ltd.	
Concrete Proofing Co., Ltd.	
Consolidated Pneumatic Tool Co., Ltd.	
Coventry Chromium Plating Co. Ltd.	
Cowper Penfold & Co., Ltd.	
Cox & Danks, Ltd.	
Crane, Ltd.	
Crone & Taylor, Ltd.	
Crosby & Co., Ltd.	
Crosslands (Rugeley) Ltd.	
Crossley Bros.	
Curtis, A. L. & Co.	286
Cutler, Samuel, & Sons, Ltd.	
D	
Dale Reynolds & Co., Ltd.	
Davey, Paxman & Co., Ltd.	
De la Rue, Thomas, & Co., Ltd. (Potterton Gas Group)	
Demolition & Construction Co. Ltd.	
Dempster, R. & J., Ltd.	267
Dempster, Robert, & Sons, Ltd.	310
Derbyshire Silica Firebrick Co., Ltd.	
Dexion Ltd.	276
Diaphragm & General Leather Co., Ltd.	282
Dick, R. & J., Ltd.	
Donkin (The Bryan) Co., Ltd.	Cover II
Douglas, Robert M., (Contractors), Ltd.	
Douglas, William, & Sons, Ltd.	
Drakes, Ltd.	
Drew, H. B., Ltd.	284
Dunlop & Ranken, Ltd.	
E	
E.B. Refractory Cement Co., Ltd.	
Edgar, William, & Son, Ltd.	
Elcontrol Ltd.	285
Electrolux Ltd.	
Elliott Bros. (London), Ltd.	
English Electric Co., Ltd.	
Etherl, Ltd.	
Evershed & Vignoles, Ltd.	
Evode Ltd.	
Ewart Chainbelt Co., Ltd.	S2
Ewart & Sons, Ltd.	
Expanded Metal Co., Ltd.	
F	
Falk Stadelmann & Co., Ltd.	
Fibreglass, Ltd.	
Flavel, S., & Co., Ltd.	
Fluxite, Ltd.	
Four Oaks Spraying Machine Co., Ltd.	
Fowler, John & Co., (Leeds) Ltd.	273
Franki Compressed Pile Co., Ltd.	
Fraser & Chalmers, Engineering Works	
Fry's Metal Foundries, Ltd.	
Fyffe & Co., Ltd.	
G	
Gas Chambers & Coke Ovens, Ltd.	
Gas Purification & Chemical, Ltd.	S5
General Descaling Co., Ltd.	284
General Electric Co. Ltd.	
General Gas Appliances, Ltd.	
Gibbons Bros., Ltd.	
Gibbons (Dudley), Ltd.	
Gibson, John & Son, Ltd.	
Glover, George, & Co., Ltd.	
Glover, Thomas, & Co., Ltd.	Cover 1, 294
Godfrey Sir George, & Partners (Industrial) Ltd.	280
Goodall Clayton & Co., Ltd.	S2
Goodyear Mechanical Goods	
Grant & West, Ltd.	
Graphite Products, Ltd.	
Green E., & Son, Ltd.	
Green & Boulding, Ltd.	S5
Gunite Construction Co., Ltd.	
H	
Hamilton, A. H., & Co., Ltd.	288
Hardman & Holden, Ltd.	
Harris & Pearson, Ltd.	
Harris Engineering Co., Ltd.	
Harrisons (London), Ltd.	
Harvey, G. A., & Co. (London), Ltd.	
Hawkins, W. T. & Co.	
Heaths (Eccles), Ltd.	
Hewitt Construction Co., Ltd.	
Hickson's Timber Impregnation Co. (G.B.), Ltd.	
Hilmor, Ltd.	
Holden & Brooke, Ltd.	
Holmes, W. C., & Co., Ltd.	271
Honeywell-Brown, Ltd.	
Horseley Bridge & Thomas Piggott, Ltd.	
Horstmann Gear Co., Ltd.	280
Howden, James, & Co., Ltd.	
Hughes, F. A. & Co., Ltd.	
Humphreys & Glasgow, Ltd.	29
I	
Ideal Boilers & Radiators, Ltd.	
I.C.I. Ltd. (Metals Division)	
Ingham, John, & Sons, Ltd.	
International Combustion, Ltd.	
J	
Jeavons, E. E., & Co., Ltd.	
Jeavons Engineering Co.	
Jenkins, W. J., & Co., Ltd.	
Johnson, C. H. (Machinery) Ltd.	
K	
Keay, E. C. & J., Ltd	
Keith Blackman, Ltd.	S6
Kerr, John & Co., (M/C) Ltd.	
King, Geo. W Ltd.	
King, Walter, Ltd.	
Kings Patent Agency, Ltd.	S5
Kirk & Co. (Tubes), Ltd.	
Kirkham Hulett & Chandler, Ltd.	288
Kleenoff Co.	S5
Klinger, Richard, Ltd.	
L	
Laidlaw, R., & Son (Edin.), Ltd.	
Lamont, James H., & Co., Ltd.	
Lancashire Dynamo & Crypto, Ltd.	
Lawler, Ayers & Co., Ltd.	
Le Bas Tube Co., Ltd.	
Leeds X.L. Fire Cement Co.	
Lionweld, Ltd.	
Lind, Peter, Ltd.	
M	
Macpherson, Donald, & Co., Ltd.	
Magnetic Valve Co., Ltd.	277
Main, R. & A., Ltd.	314
Marco Conveyor & Engineering Co., Ltd.	
Master Gas Cookers Ltd.	
Mavor & Coulson, Ltd.	
Mechanical Handling	
Meltham Silica Fire Brick Co., Ltd.	
Mercol Products, Ltd.	286
Messenger & Sons, Ltd.	
Meters, Ltd.	275
Metropolitan Leather Co., Ltd.	
Milnes Meters, Ltd.	
Mitcham Smelters Ltd.	286
Mitchell, H., & Co.	284
Moler Products, Ltd.	
Monk, A., & Co., Ltd.	
Morris Commercial Cars, Ltd.	
N	
National Benzole Co., Ltd.	
National Enamels, Ltd.	
Newton Chambers & Co., Ltd.	Cover IV
Nu-Swift Ltd.	S5
O	
Olding, Jack & Co., Ltd.	287
Orme, Evans & Co., Ltd.	
Oxley Engineering Co., Ltd.	
P	
Parkinson & Cowan (Gas Meters), Ltd.	294
Parkinson Stove Co., Ltd.	
Pass, E. & Co., Ltd.	
Peckett & Sons, Ltd.	
Peebles & Co., Ltd.	
Peel, H. Ltd.,	
Pegson, Ltd.	
Perl Controls, Ltd.	
Plus Gas Co., Ltd.	
Power Gas Corporation, Ltd.	274
Power Jacks Ltd.	
Powers-Samas Accounting Machines (Sales), Ltd.	
Pratt Engineering Co.,	
Press, William, & Son, Ltd.	
Pulsometer Engineering Co., Ltd.	
R	
Radiant Heating, Ltd.	
Radiation, Ltd.	312, 313
Rawlplug Co., Ltd.	
Reavell & Co., Ltd.	286
Riley, A. J., & Son, Ltd.	
Roberts, R. E. & Sons, Ltd.	
Robinson, J. H. & Co., (Liverpool) Ltd.	286
Royles, Ltd.	
Rozalex, Ltd.	288
Russell, R., & Sons, Ltd.	
S	
Salter, T. E., Ltd.	293
Saunders Valve Co. Ltd.	289
Scottish Non-Ferrous Tube Industries, Ltd.	
Shannon Ltd.	
Siebe Gorman & Co., Ltd.	
Sigma Instrument Co., Ltd.	
Simon-Carves, Ltd.	
Simon, Richard, & Sons, Ltd.	282
Sisson, W., & Co., Ltd.	
Slingsby, W., & Co., Ltd.	
Smith Meters, Ltd.	
Smith, Thos. & Sons, (Rodley), Ltd.	
Spencer, Peter & Sons Ltd.	
Spencer Bonecourt, Ltd.	
Sperryn & Co. Ltd.	
Standard Furnace & Setting Co., Ltd.	
Stanton Ironwork Co., Ltd.	
Staveley Iron & Chemical Co., Ltd.	
Stein, John G., & Co., Ltd.	
Stelcon (Industrial Floors) Ltd.	289
Stewart & Gray, Ltd.	S1
Stewarts & Lloyds, Ltd.	
Stone, J. B., & Co, Ltd.	
Stoves, Ltd.	270
Strachan & Henshaw, Ltd.	
Stringer Bros.	
Sugg, William, & Co., Ltd.	
Summerson, Thos. & Sons, Ltd.	
Sutcliffe Speakman & Co., Ltd.	
Sutherland, A. G., Ltd.	278
T	
Taylor, F., & Sons, Ltd.	
Thomas & Bishop, Ltd.	316
Thomas (Richard) & Baldwins, Ltd.	
Thompson, John, Conveyor Co.	
Thorp, Thomas, & Co., Ltd.	
Tully, Sons & Co., Ltd.	S4
Turners Asbestos Cement Co., Ltd.	
U	
Underpressure Engineering Co., Ltd.	S2
United Kingdom Construction & Engineering Co., Ltd.	S2
V	
Vale, Thomas, & Sons, Ltd.	
Visco Engineering Co., Ltd.	S6
Vulcan Stove Co., Ltd.	
W	
W.D. (Sheeters), Ltd.	
Wailes Dove Bitumastic Ltd.	
Wakefield, C. C., & Co., Ltd.	
Wakelin, F. H., Ltd.	
Walker, C. & W., Ltd.	S1
Walker, Crosweller & Co., Ltd.	
Waller, George, & Son, Ltd.	
Ward, Thos. W., Ltd.	
Webster H. R. Ltd.	S2
Wellington Tube Works, Ltd.	
Wellman Smith Owen Engineering Corpn., Ltd.	
Wessex Industries (Poole) Ltd.	
West's Gas Improvement Co., Ltd.	Cover III
West Hunwick Silica & Firebrick Co., Ltd.	Cover II
West's Piling & Construction Co.,	
Westwood & Wrights, Ltd.	S2
Whessoe, Ltd.	269
Whitehouse, Wm., & Co., Ltd.	
Whittaker Hall & Co. (1929) Ltd.	
Wilkes, A. H., & Co., Ltd.	
Willey & Co., Ltd.	
Williams, John E., Ltd.	
Williamson Cliff, Ltd.	
Wilson, George, Gas Meters, Ltd.	
Winn & Coales, Ltd.	
Woodall-Duckham Vertical Retort & Oven Construction Co. (1920), Ltd.	309
Wood, Hugh, & Co., Ltd.	
Wright, Alexander, & Co., Ltd.	S2
Y	
Yorkshire Copper Works, Ltd.	
Appointments Vacant	S5
Appointments Wanted	
Contracts Open	
Educational	
Financial	
Miscellaneous	S5
Notice	
Patents	S5
Plant Wanted and for Sale	S5
Publications	
Repairs	


H & G
Installations
for the
Production of
CARBURETTED WATER GAS
BLUE WATER GAS
SYNTHESIS GASES
PRODUCER GAS
HYDROGEN
HUMPHREYS & GLASGOW LTD.
HUMGLAS HOUSE · CARLISLE PLACE · LONDON · SW1 · Telephone VICtoria 3961
Established 1892

VENTILATE AS YOU HEAT



The

VOLEX

REGISTERED TRADE MARK

WARM AIR SYSTEM

is recognised as the most efficient and economical system of Heating and Ventilation for Schools, Clinics, Churches, Shops, Offices, Factories, Workshops and all buildings where a pleasant equable atmosphere—essential to health and efficiency—is required. It maintains an even temperature and draughtless ventilation all the year round, and the air in the building can be changed as often as desired according to the processes carried on. The heaters are made either for gas-firing, hand-firing, worm feed stokers or oil firing.

Enquiries invited by the Sole Makers:—

T. E. SALTER LTD. TIPTON, STAFFS.
TELEPHONE: TIPTON 1657/1658.

Gas Journal

104th YEAR OF PUBLICATION

EDITOR: NORMAN S. SMITH, B.Sc. (Gas Eng.)

11, BOLT COURT, FLEET ST., LONDON, E.C.4. Telephone: CENtral 2236-7 Telegrams: Gasking, Fleet.

VOL. 271 NO. 4653 AUGUST 6, 1952

CONTENTS

Page

EDITORIAL COMMENT

Gas Appliance Approval and Certification 295
The Engineer and the Publicist 296
Interdependence 296
Well Done 297
Pathways to Opportunity 297

BOOK REVIEW

A New Gas Industry Handbook 297

NEWS OF CURRENT EVENTS

Personal 298
Diary 298
1952 Journal Directory 298
White Paper on Iron and Steel: Preview of Denationalisation Bill 299
Chemical Works Safety Conference: Points from the Papers 301
Board Members Visit Liverpool 301
British Standards Institution 301
Scottish Board Fined for Polluting River 301
Apprentices 'At Home' 303
Publications Received 316
Braille Centenary 316
Television Gas Cooker 316
Alder & Mackay to Join United Gas Industries ... 316

IN PARLIAMENT

Restricting Powers of Entry: Duties of Chief Scientist's Division: Slough Gas Undertaking: Disfigurement of Beauty Spots: Monopolies Commission: Ridley Committee Report 300

CONSULTATIVE COUNCILS

West Midlands: Problem of Steel for Gasworks ... 302
Eastern: Price Stability 302

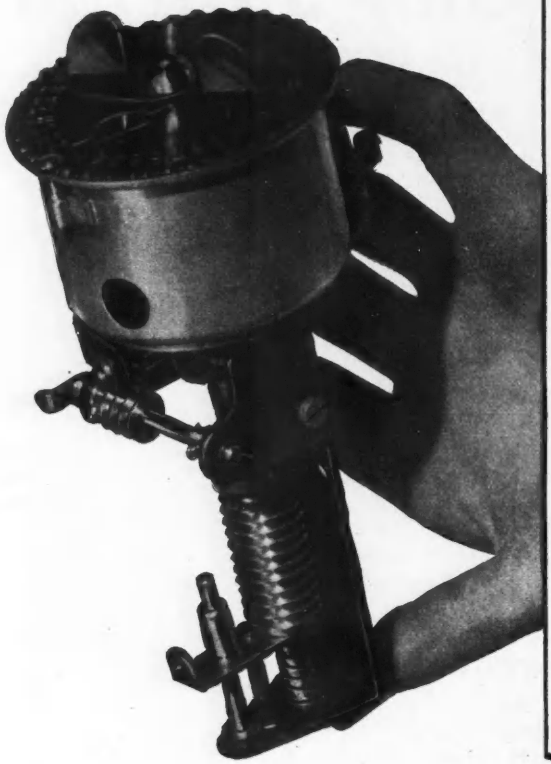
TECHNICAL RECORD

Reconstruction of Howdon Gasworks. By J. E. McManus, Howdon-on-Tyne 304
Appliance Approval in the States. By Charles E. Bennett, President, American Gas Association, and Edwin L. Hall, Director, American Gas Association Laboratories 308

Subscription Rates: Home and Empire 52/-; Foreign 60/-

Full Publishers' Notice: See Page S3, July 23.

Gas Journal . . . . Walter King Ltd.



One mechanism only is needed for any denomination of coin whether it be 1d., 6d., 1/- or 2/6.
(In combinations of 1d.—1/-; 6d.—1/-; 1/-—2/6)

THOMAS GLOVER & CO LTD
EDMONTON, LONDON, N.18 & BRANCHES

Parkinson and Cowan
(GAS METERS) LTD.
★ TERMINAL HOUSE, GROSVENOR GARDENS, LONDON, S.W.1.

- DOMESTIC METERS
- INDUSTRIAL METERS
- INFRA-RED DRIERS
- REMOTE INDICATION AND CONTROL EQUIPMENT
- STREET LAMPS
- LABORATORY METERS
- ROTARY METERS

★ THE HOME OF THE DOUBLE CENTURY METER

AP1

GAS JOURNAL

VOL. 271. NO. 4653 104TH YEAR AUGUST 6, 1952

GAS APPLIANCE APPROVAL AND CERTIFICATION

INFORMATION on the gas appliance approval and certification scheme of the American Gas Association was brought up to date in a paper at the Brussels conference of the International Gas Union by the President of the Association and the Director of the Association's Laboratories. The paper is published on later pages of our issue today, from which it will be seen that the historical background of the whole scheme is succinctly outlined and the reasons for its inception are made clear. Latest available figures for the American gas industry indicate sales of more than 9 mill. domestic gas appliances for 1950. Cookers took first place with 3 mill. units sold, automatic water heaters followed with a sale of over 2,300,000, more than 2 mill. direct space heaters were sold, and over 1 mill. central heating units were installed. It is reliably estimated that over 28 mill. gas cookers, nearly 15 mill. automatic storage water heaters, and almost 9 mill. central heating installations are in service. These are impressive figures and serve as pointer to the responsibility of the gas industry in the States. Not only are millions of gas appliances in use giving safe and satisfactory service, but their number is rapidly increasing—and more than 95% of domestic gas appliances recently installed represent approved models. 'Buyers and sellers alike for many years have placed increasing insistence on approved models. . . . The approval programme originally inaugurated by the gas industry in the interests of self-regulation may now be said to have accomplished the purposes for which it was established.' The conclusions drawn in the paper are based on experience extending well over quarter of a century.

Great Britain is exceptional among the larger gas producing countries in the world in having no recognised national system of certification of gas appliances, but it does not follow that we are behind other countries in ensuring the safety and efficiency of these appliances. We must have regard to the widely different conditions between the gas industry of Great Britain and the gas industries of other countries; and we think we are right in saying that the establishment of national testing laboratories has been forced upon other countries which do not control the supply and installation of appliances. Moreover, the technical standards accepted under the various systems operating in other countries show that they are not in advance of the standards which in fact operate in Great Britain. And it can be argued that a scheme of certification may cause design to work down to a minimum limit. The view has also been put forward that the adoption of a label or stamp of approval might tend to convey to the public that all appliances bearing the stamp are of equal merit. Again, it has been suggested that an official stamp may be accepted by the public as an unqualified guarantee, whereas in fact it can only infer that the appliance bearing it will fulfil the required standard when new and properly installed; it does not remove the need for correct installation and adequate maintenance.

To the argument that certification and badging on a national scale might prejudice progress, due consideration should be given to the fact that in all the approval schemes of the kind the standard requirements are not static. Improvements are embodied from time to time as progress dictates, and certificates of approval are valid for a limited period. In America the renewal period is yearly and this applies also to Australia, where, we understand, certificates are not renewed until the improvements are embodied in the appliance. We take it, however, that the badge is not removed from a previously approved appliance. How, therefore, can public reaction be properly assessed? To the contention that a badge of approval might cause design to work down to a minimum limit, the answer has been given that competition between various manufacturers and the attraction of design and finish will prevent such a tendency. And, of course, irrespective of badging, an appliance must in all circumstances be properly installed and maintained.

As we have said, gas appliance standards in Great Britain are high, and in practice the gas consumer is safeguarded as far as possible. There are recognised codes of practice for gas installations which are constantly under review. Though admittedly they are not enforceable, the requirements of these British Standards are for the most part fulfilled or exceeded, and no gas appliance manufacturer could hope to succeed in the competitive field unless he was prepared to satisfy these requirements. In point of fact, appliance manufacturers have led the way in improvements designed to ensure safety and efficiency. On the other hand, has nationalisation of the gas industry lent a new complexion to this problem of certification? For many years before nationalisation we advocated agreement on methods of testing and assessing the capabilities of gas appliances. We asked for a more uniform understanding in the matter and for full co-operation between the laboratories of gas undertakings. We have our codes of practice, but to what extent do the area boards agree on acceptable standards of performance for gas appliances? We have in mind the manufacturer who may introduce a new appliance to the gas industry. He may submit it to one board or another for test and approval. Does this approval apply only to the board which carried out the test? How, in brief, does the manufacturer stand? There should, we feel, be no need for more than one test of performance which should be regarded as giving general satisfaction to all boards regarding basic requirements of safety and efficiency. The alternative is a waste of time to the detriment of everybody concerned.

THE ENGINEER AND THE PUBLICIST

IN industry there is a gulf—narrowing all too slowly—between the engineer and the publicist. Both are concerned with potentials, but there the similarity ends. In the gas industry, even today, there persists a 'profit in the retort house' school which regards the publicist as a noisy, empty vessel which must be filled by the labours of others. And who can deny that the industry has been largely built up by those who, working zealously within their own small orbits, have fashioned, brick by brick, a great structure of technical achievement and a great institution? But the theory that if you produce what the public, in fact, needs, the public will buy it, is no longer tenable. The publicist believes that the achievements of the engineer are like a car in a locked garage; without the key of public relations—we use the term in its widest sense—they remain static.

Broadly the strong and enviable position of the gas industry is traceable to the fundamental efficiency and flexibility of the gas-making process, the skill and experience of the gas engineer, to the creation in the past of consumer service, to the efforts of the B.C.G.A. and its successors, and—over-riding all—to public demand. But the publicist is a comparatively recent importation, brought into life and prominence by the spur of competition—notably electrical competition. To a large extent, of course, publicists created their own jobs, with such success that today they are indispensable, a situation which the engineer accepts either with good grace or at least toleration. Toleration, however, is not enough. The activities of the engineer and the publicist are interdependent.

In brief, the gas industry could not dispense with publicity and hope to progress. What we need to do, having accepted this powerful tool, is to explore its capabilities and its possibilities to the full. This is the real theme of our present comment. In the Gas Council we have a highly efficient publicity machine, one which has been drastically overhauled in the light of today's needs. But the measure of its success is the extent to which the industry takes advantage of the facilities offered—and that, so far, is inadequate. Why? There are, we suggest, two main reasons. One is a reluctance on the part of those who have gained positions of eminence on the strength of their engineering achievements to recognise that they must play a part in creating a national picture of the gas industry, a task which can only be done by the fullest co-operation with the central specialist body.

INTERDEPENDENCE

WE suggest that the other cause is an understandable desire on the part of certain gas boards to spurn undue dependence on the Council in matters of this type, believing that there can be taken in their own areas whatever measures are necessary to promote a wider knowledge of gas service. With this view we have the greatest sympathy, and knowing the quality of work produced by certain boards, divisions, and even undertakings, we fully appreciate that it would be unwise not to give this talent generous scope. But to give that scope it is not necessary to ignore the work of the Gas Council. The Council provides the broad pattern and some of the tools; after these have been accepted there remains ample opportunity for other publicity departments to elaborate on the theme and mould their own localised schemes within the larger framework.

In our view, the gas industry shows insufficient cohesion within its ranks on this important question. We do not seriously believe anyone doubts the abilities of the Gas Council's publicity team to produce ideas and materials of the necessary high standard. Exhibitions provide excellent example. At almost all national exhibitions the gas stand is one of the main attractions and finds its place in most published reports of the show. Last month, for example, saw the Council's most ambitious open-air effort to date, at the Royal Show. Designed in little more than a week, constructed in five weeks, this magnificent display on a 7,000 sq. ft. site, was a credit to all concerned—and not least to the South Western Gas Board, who provided an object lesson in intelligent co-operation. Or take publications. Who, on examining such productions as the 'Commercial Uses of Gas' series and the many other, lesser brochures and leaflets, can deny that these are of a standard which enables them to hold their own against the literature of any other industry? Yet their circulation throughout the areas is uneven and often unenterprising. In

another sphere—a highly competitive and expert field—gas films are proving attractive to the public and their sales approach is showing results. It is all the more disquieting, then, to learn that more films are sent direct from Gas Industry House than are used by all the area boards.

Clearly there is a need for greater working together and understanding of aims and objects. We believe that it is primarily to the engineer that we must look for this helping hand which, if extended with a real desire to appreciate the other man's efforts and to work together towards a common goal, will do much to smooth a path at present far too stony and uneven. The engineer and the publicist are both essential to the future prosperity of gas, but they must pull in the same direction.

WELL DONE

AFTER three years' service the Eastern Gas Consultative Council is satisfied that even if it is not ideal it is at any rate one of the best of its kind in that it escapes most of the criticism levelled at consumer councils in general in the recent Parliamentary debate. Instead of a secretary seconded by the Gas Board it has a 'Chairman's personal assistant,' and although some of the members do not always agree that the Council is sufficiently in touch with consumers there is evidence, from the diversity of complaints discussed at the bi-monthly meetings, that the Council has a good grip of its responsibilities. It was not unnatural therefore that at the last meeting before the summer holidays the urge to celebrate in characteristic English fashion found expression in a proposition—by a lady member—that the members should dine or lunch together and in the company of the Chairman, Deputy Chairman, and Secretary of the Gas Board, by way of relaxation from the oftentimes wearisome work of the Council and its divisional committees. Quite intentionally the question of who would pay for the meal and other details were left open. We hope no-one will raise petty questions as to whether or not so-called 'public money'—a misnomer in any case—is to be spent on such frivolities. Anything within reason that the Council can do to bring more human nature into its deliberations will be well worth doing, and we see no reason why other councils should not follow its lead.

PATHWAYS TO OPPORTUNITY

LIKE many other industries today we lack recruits of the calibre necessary to replace normal wastage at practically every level—and, indeed, to fill even the vacancies arising from expansion of business. For this reason the Gas Council's latest publication, *Pathways to Opportunity*, is particularly timely. It deals, as the title suggests, with schemes of apprenticeship and training, and it should do much to stimulate in school-leavers an interest in the industry as a useful and profitable career. Such a booklet is especially needed at this time to counteract the impression that a career in the gas industry lacks much of the interest and 'romance' in which popular imagination has clothed some of our other industries.

Prepared by a committee set up by the Industrial Relations Department of the Gas Council, the booklet devotes a few introductory paragraphs to a description of the industry—what it stands for and what it does—leading up to a detailed account of the training facilities and the opportunities available, with accompanying illustrations of apprentices at work—and, incidentally, at play, which is a sound psychological touch. While the junior member of any industry is inclined to view with some cynicism the oft repeated remark that the chain of promotion lies open from the youngest apprentice to the chairmanship of a board, this is, nevertheless, especially true of our industry. As a centrepiece of the booklet, in diagrammatic form, is a typical 'tree of opportunity'—which is just another name for 'chain of promotion'—indicating the generally established channels of progression, together with alternative routes for exceptional candidates.

A booklet of this kind demands wide and intelligent distribution if it is properly to fulfil its important purpose. It must find its way to the desk of the careers master of every senior school as well as to every juvenile employment bureau in the country. While one does not care very much for the use of the word 'propaganda' in this connection, there is no doubt that the dignity and competence of this Gas Council publication should serve the industry well. It will certainly enhance its reputation as a field in which good labour relations exist—for the simple reason that labour relations are inherently good—which should be one of the strongest inducements to the youngster who is trying to make up his mind along which path his true bent lies.

BOOK REVIEW

A NEW GAS INDUSTRY HANDBOOK

THE German Association of Gas and Water Engineers has published a comprehensive handbook* on the gas industry to which well-known experts have contributed. It deals with gas production, distribution, and utilisation, as well as with chemical control, thus covering practically all the subjects with which members of the industry are concerned.

This handbook, which has the advantage of being in one volume, therefore fills a long-felt gap by providing a complete survey of the theoretical and practical aspects of the industry as well as by giving a synopsis of its historical development up to the present day.

It deals with energy supply, the organisation of the gas industry, the production and utilisation of gases of low calorific value in industry, liquified gases, gas tariffs, and statistics in comparison with other countries.

In view of its importance a large proportion of the book is devoted to 'Gas Production' and deals with raw materials, carbonisation, gasification, purification, station meters, compressors, holders, control of works processes, corrosion, properties and marketing of by-products, and gas standards.

The section 'Gas Supply' contains separate chapters on low, medium, and high pressure gas distribution, gas governors, mains and services, as well as consumers' installations. Special attention is paid to 'Consumers' Meters,' in a chapter in which the various problems connected with them as well as their technical development are discussed in detail.

'Gas Utilisation' deals in a clear and comprehensive manner with the theoretical aspects underlying this immense subject and gives a brief survey of the possibilities which the use of gas offers in the domestic, commercial, and industrial fields.

A chapter on the examination of solid, liquid, and gaseous fuels must be regarded as a useful addition.

Numerous references to literature, a list of authors, and an index, together with a list of illustrations (196) and tables (147) complete this very useful book.

Die Ciasversorgung (The Gas Industry) Deutscher Vorein von Gas und Wasserfachmännern. Pp. 628. Essen: Vulkan-Verlag Dr. W. Classen. Price 56 DM. (Leathercloth).

Personal

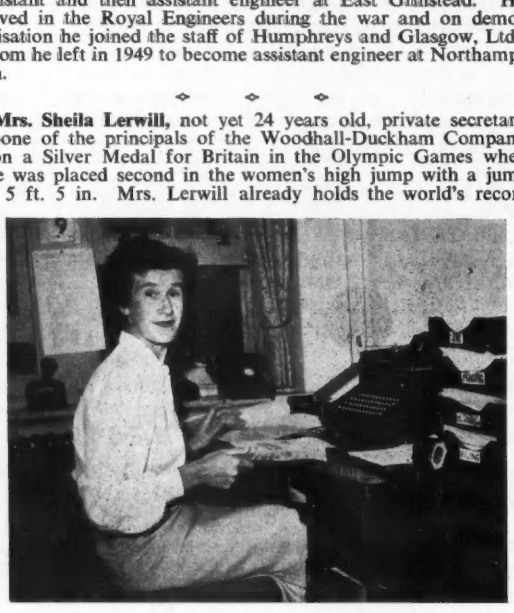
Major R. A. B. Smith, M.C., A.M.I.C.E., has been appointed a member of the Special Panel of the Transport Tribunal in succession to the late Mr. E. S. Shrapnell-Smith. Major Smith first became concerned in transport matters when with the Cement Marketing Co., Ltd. He was at one time President of the Commercial Motor Users' Association, and is at present a Vice-Chairman of the National Road Transport Federation (which he represents on the Committee on Road Safety) and a member of the Executive of the Automobile Association.

◇ ◇ ◇

Mr. N. F. Riches, Engineer at the Northampton undertaking of the East Midlands Gas Board, has been appointed Station Engineer at the Denton (Manchester) works of the North Western Gas Board. Starting as a pupil in the former Ramsgate Gas and Water Department, he later became technical assistant and then assistant engineer at East Grinstead. He served in the Royal Engineers during the war and on demobilisation he joined the staff of Humphreys and Glasgow, Ltd., whom he left in 1949 to become assistant engineer at Northampton.

◇ ◇ ◇

Mrs. Sheila Lerwill, not yet 24 years old, private secretary to one of the principals of the Woodhall-Duckham Company won a Silver Medal for Britain in the Olympic Games when she was placed second in the women's high jump with a jump of 5 ft. 5 in. Mrs. Lerwill already holds the world's record



for the women's high jump with a height of 5 ft. 7½ in. Mrs. Lerwill is also a busy housewife and interested in cooking and as a relaxation likes driving her husband in their yellow sports car known as the 'yellow peril.' This photograph of Mrs. Lerwill was taken in her office just before she left for Helsinki.

Diary

Sept. 2.—East Midlands G.C.C.: Victoria Station Hotel, Nottingham, 11.30 a.m.

Sept. 10.—South Western G.C.C.: 34, Bridge Street, Taunton, 11 a.m.

Sept. 11.—Scottish Association of Gas Managers: Annual General Meeting, Barrfields Pavilion, Largs. (Golf and bowling competitions September 10; Wemyss Bay-Kyles of Bute excursion September 12).

Sept. 15.—Eastern G.C.C.: Connaught Rooms, Kingsway, W.C.2, 2 p.m.

Sept. 15-19.—Association of Public Lighting Engineers: Annual Meeting and Exhibition, Harrogate. Exhibition of public lighting equipment, Gas Council exhibit, Stand No. 9.

Sept. 16.—Irish Association of Gas Managers. Annual Meeting, Londonderry. (For programme see *Journal* of July 30, p. 237.)

Sept. 25.—North Thames G.C.C.: Westminster City Hall, Charing Cross Road, W.C.2, 2.30 p.m.

Sept. 26.—Manchester and District Section, I.G.E.: Visit to Robert Dempster and Sons Ltd., Rose Mount Ironworks, Elland, Yorks.

Sept. 29.—West Midlands G.C.C.: Queen's Hotel, Birmingham, 2.30 p.m.

1952 'Journal' Directory

THE following changes have been notified during the past month. To keep the information in the 1952 edition of the *Gas Journal Calendar and Directory* up to date readers are invited to note these alterations (together with the appropriate adjustments relating thereto in the 'Personal' section of the *Directory*, pp. 141-156):

Page 22.—EASTERN GAS CONSULTATIVE COUNCIL: Delete Councillor M. F. Jennings, Saxmundham, deceased.

„ 22.—NORTH THAMES GAS CONSULTATIVE COUNCIL: Delete Councillor C. F. Seaton, deceased.

„ 26.—GAS COUNCIL: Add *Films Officer*, S. Irving.

„ 29.—EAST MIDLANDS GAS BOARD: J. B. Leaman (formerly *Coke Marketing Officer*) *Deputy Coal and By-Products Officer.*

„ 75.—BISHOP AUCKLAND: Delete W. Tunmore, *E & M*, retired.

„ 79.—SOUTH EASTERN GAS BOARD: Add Central Construction Department: *Manager*, C. Stott, M.C., B.SC., M.I.CHEM.E. Chief Engineer's Department: T. W. Gibson, *Deputy Chief Engineer*, vice C. Stott. Commercial Manager's Department: Delete A. B. Seton, *Sales Manager.*

„ 81 and 84.—KENT SUBURBAN DIVISION: T. A. Canning, *Div. Engineer*, vice T. W. Gibson.

„ 82.—ROTHERHITHE: Delete T. A. Canning, *Station E.*

„ 119.—COVENTRY: D. K. Green, *Senior Engineer in Charge*, vice A. E. West, *E & M.*

„ 119.—LEAMINGTON: Delete D. K. Green, *GM & E*, removed.

„ 119.—RUGBY: A. E. West, *E & M*, vice P. N. Langford, *E, M & S*, retired.

„ 164.—GUERNSEY: R. G. Luxon (formerly *E, M & S*) now *Dir, E, M & S.*

„ 180.—GAS RESEARCH BOARD: Wound up by special resolutions, June 26; assets transferred to Gas Council.

„ 183.—EASTERN JUNIOR GAS ASSOCIATION: *President*, J. Anderton (Yarmouth); *Senior Vice-President*, F. J. Denny (Ipswich); *Junior Vice-President*, R. F. Robinson (Watford); *Assistant Hon. Secretary and Transactions Secretary*, A. D. Duxbury (Peterborough).

„ 183.—LONDON AND SOUTHERN JUNIOR GAS ASSOCIATION: *President*, C. D. Shann (North Thames); *Senior Vice-President*, W. Johnson (South Eastern); *Junior Vice-President*, E. W. B. Dunning (North Thames); *Assistant Secretary*, J. V. Rigg (North Thames).

„ 184.—NORTHERN JUNIOR GAS ASSOCIATION: *President*, R. Williamson (Sunderland); *Senior Vice-President*, S. Jones (Middlesbrough); *Junior Vice-President*, T. R. Wicks (Workington).

„ 184.—SCOTTISH JUNIOR GAS ASSOCIATION (EASTERN DISTRICT): T. R. Cameron (Galashiels), *President*; J. T. Christie (Dundee), *Hon. Secretary*; J. Watson (Dundee), *Hon. Treasurer.*

„ 189.—GAS OFFICERS' GUILD: *Chairman*, J. F. Rust (Wales Gas Board, Newport); *Vice-Chairman*, E. O. Rose (Eastern Gas Board, Tottenham).

„ 191.—KINDRED ORGANISATIONS: Add: London and Counties Coke Sales Circle. Offices, Gas Industry House, 1, Grosvenor Place, S.W.1. *President*, Sir John Charrington. *Chairman*, John Charrington. *Secretary*, T. G. Meyrick.

„ A3 and A5.—BRITISH FURNACES, LTD., and the BRYAN DONKIN CO., LTD.: T/N changed to Chesterfield 3153.

A recent issue of 'Target,' a productivity bulletin issued through the Central Office of Information, contains photographs illustrating useful ideas for increasing productivity put forward as suggestions by workpeople of Newton Chambers & Co., Ltd., Thorncliffe. The ideas were submitted under the Company's suggestions scheme.

Iron and Steel White Paper

Preview of the Denationalisation Bill

As a wholly nationalised industry unlikely to be the subject of serious proposals for denationalisation and as a substantial consumer of iron and steel, the gas industry is interested in plans for the denationalisation and reorganisation of the iron and steel industry which were detailed in a White Paper published last week. A Bill implementing the plans is expected to come before the House of Commons early in the next session of Parliament.

AN extension of public control coupled with a retreat from public ownership is the principle on which the Government's policy indicated in the White Paper is founded.

An Iron and Steel Board of not more than 12 members appointed by the Minister of Supply will be set up to control capital development, fix maximum prices, and review distribution of raw materials, including scrap. Qualification for membership will include experience in the iron and steel industry, in engineering and other industries using iron and steel, and in trade unions. There will be an independent chairman and some additional independent members; all the members will be appointed for a maximum of five years and will be eligible for reappointment.

New Board's Functions

The Board will cover the activities not only of the 92 firms with their 150 associated companies now nationalised, but more than 400 steel-producing concerns still privately owned. It is intended to bring the whole industry again under the supervision of a single authority, ending the present distinction between nationalised and non-nationalised sectors.

It is intended that all the main processes of the iron and steel industry shall come within the purview of the Board, which will not be concerned with the extensive engineering and other extraneous activities which, though not part of the iron and steel industry, were brought under the control of the Iron and Steel Corporation because they happened to form part of the activities of the companies which were nationalised.

The iron and steel processes to be supervised by the Board are set out in an appendix. They are:

1. The quarrying or mining of iron ore or the treatment or preparation of iron ore for smelting.

2. The smelting of iron ore in a blast furnace with or without other metalliferous materials or the production of iron by any other process—*i.e.*, as refined or wrought iron.

3. All raw steel manufacture whether in the form of ingots, continuous cast billets, or metal for castings.

4. The casting of iron or steel by any process.

5. The processing, with or without heat, of iron or steel by rolling or forging (excluding drop forging and blacksmiths' hand forging).

6. The production from iron or steel of hot-finished tubes or pipes or bright bars.

7. The production of tinplate or terneplate.

The Board will have the general duty of supervising the industry with a view to promoting the efficient, economical, and adequate supply of iron and steel, and will be required to keep under review (a) development of production capacity, (b) prices, (c) raw material supplies, (d) research and technical training, (e) arrangements for joint consultation between management and employees on matters of mutual interest other than wages and conditions of service, and (f) arrangements for the safety, health, and welfare of employees. One of the most important responsibilities of the Board will be to supervise capital development. As in the case of the nationalised industries, the Board will make an annual report to the Minister—in this case the Minister of Supply—who will lay it before Parliament.

Change of Ownership

The Iron and Steel Bill will provide for the dissolution of the Iron and Steel Corporation of Great Britain and for the transfer of the securities of the nationalised iron and steel companies to a holding and realisation agency, to be composed of a small number of persons possessing the necessary qualifications and experience who will be appointed by the Treasury. The agency will have the duty of securing the return of such companies to private ownership and meanwhile to secure their efficient direction.

The Treasury must approve terms of sale and the timing of the transactions, though here the agency will be allowed some discretion. Sales will start as soon as possible after the passing of the Bill, but the White Paper points out that in view of the magnitude of the financial operations involved these may well take some years to complete. Before disposal the agency may effect such regroupings of the undertakings or alterations in the capital structure of companies as may be desirable; the agency will be required to consult the new Iron and Steel Board in regard to regroupings.

Price of Securities

The price to be asked for securities will be based on 'all relevant factors at the time of sale.' Account will have to be taken of the important changes which have taken place since nationalisation in the physical assets, capital structure, reserves, and trading prospects of many of the iron and steel companies, together with other considerations such as the monetary and market conditions prevailing at the time.

Iron and steel stock will become part of the national debt and will be renamed 3½ per cent. Treasury Stock, 1979-81. The agency will be empowered to accept this stock and most other Government stock in payment for securities of iron and steel companies which it sells. Since the sale price will be fixed in relation to conditions current at the time of sale these Government stocks will be accepted at their then current market value. During the transition period the agency will be able to provide finance for companies whose securities it holds. The agency will exercise its power as a shareholder in the ordinary way, but will not intervene in matters of day-to-day management.

The Government intends that, pending disposal, the companies owned by the agency should operate as far as possible on the same footing as their privately owned competitors and should stand in the same relationship to the Board. Like the new Board, the agency will make an annual report to its appropriate Government department—in this case the Treasury—who will lay it before Parliament. The price paid by the State for the iron and steel companies that were nationalised was about £240 mill.

IN PARLIAMENT

Restricting Powers of Entry

LORD SIMONDS, the Lord Chancellor, told the House of Lords on July 29 that the Chancellor of the Exchequer was considering further reductions in the number of officials with the right to enter private property. Remarking that 'an Englishman's home is still his castle,' his Lordship said the number had already been reduced by 2,000.

LORD STRABOLGI had raised the question of the legal position of a householder who refused to admit an inspector or other official demanding entry. He said he was particularly concerned with the general principle. In the case of gas or electricity men they would probably be in uniform, but telephone men might not be. He quoted the case of an American lady who had been nearly murdered when she had admitted a man who said he had come to see her telephone.

He also told the House about a relative of his who had been alone in her small house when a man had come to the door. He told her he had come to repair the telephone. Knowing the telephone to be in perfect order, she had slammed the door and then going to a window had asked him who he was. The young man said he was sorry but had come to the wrong house. 'That is most irregular and improper,' commented Lord Strabolgi. 'There was this young man without any evidence of who he was—was she to be blamed for refusing him admittance? He might have entered the house and knocked her about and then people would have called her a fool for letting the man in.'

Written authority, he suggested, was of little use, for women had to open the door to read it. Why could they not carry some object that could be easily seen? Sheriffs in America had badges, and why should not some sort of object like that be produced? His instructions to his own servants, he said, were always to keep the door on the chain until they were satisfied. That should be done everywhere.

The LORD CHANCELLOR, replying, said he assumed Lord Strabolgi was referring to an inspector or an official who had a statutory right but did not have a search warrant. Where the power to enter a private house, exclusively used as such, was conferred upon an official by statute, the statute also provided for penalties for obstructing the official while exercising those powers in the execution of his duties. From inquiries he had made he had been unable to ascertain that any prosecutions of that nature had been undertaken in recent years.

Many persons having the power of entry are not 'snoopers' in the popular sense, he pointed out. Inspection for war damage, for instance, was obviously in the householder's interests, and inspection of the homes of boarded out children was obviously necessary.

If proceedings were taken against a householder it would be for the Court to decide, having regard to the terms of the relevant statute and the facts of the particular case, whether an offence had been committed. 'If a Court thought there was a lonely woman in a house and that she was afraid and barred the door and the inspector was refused admittance, I cannot but suppose that the Court would take a very lenient view of the obstruction.'

'Her Majesty's Government considers it desirable,' he continued, 'that powers of entry into private premises should be confined to the smallest possible number of persons.' There had been a reduction of some 2,000 and the Chancellor of the Exchequer, in consultation with other departments, was considering further reductions.

The Lord Chancellor said that the Government could assume no responsibility for gas inspectors or electric light men, who were not servants of the Government. Their entry was provided for by an arrangement made when gas or electricity was installed.

Viscount SAMUEL asked about food inspectors. Lord SIMONDS said they had no right to enter private homes. If the discussion were to be extended to the right to enter shops and factories he would prefer to do that independently.

Lord LLEWELLIN expressed delight to hear that the Government intended to cut the number entitled to enter private houses and declared that as a matter of principle officials in the majority of cases ought not to have the right to demand entry.

Duties of Chief Scientist's Division

The nature and extent of the duties of the Chief Scientist's Division of the Ministry of Fuel and Power formed the subject of a question by Mr. F. J. ERROLL (Altrincham and Sale) in the Commons on July 21.

Mr. GEOFFREY LLOYD, in a written reply, stated that the Chief Scientist's Division is concerned with promoting research and development in the efficient use of fuel and power. It consists, he said, of a scientific branch which investigates new methods of using conventional fuels and new sources of energy; a fuel efficiency branch which promotes the application of existing technical knowledge with the object of saving fuel; and a separate establishment responsible for research designed to improve the safety, health, and welfare of men working in coal mines.

Slough Gas Undertaking

Mr. A. E. BROCKWAY (Eton and Slough) asked the Chancellor of the Exchequer on July 22 if agreement had been reached between the North Thames Gas Board and the Inland Revenue Department regarding the valuation of gas undertakings in the borough of Slough.

Mr. R. A. BUTLER replied in the negative, adding that certain special problems relating to the valuation of gas undertakings in general were under consideration, and he hoped that early progress would be made in the matter.

Disfigurement of Beauty Spots

Mr. J. T. PRICE (Westhoughton) asked the Minister of Housing and Local Government what was the policy of his Department regarding the continued disfigurement of natural beauty spots by pylons and overhead electrical cables, and if he would seek powers to restrain the Central Electricity Board in these activities.

The Parliamentary Secretary to the Ministry of Housing and Local Government (Mr. ERNEST MARPLES) replied that overhead electric wires in general already required the approval of the Minister of Fuel and Power, who was required by statute to consult the local authorities concerned before reaching a decision. No question of seeking further powers therefore arose.

Monopolies Commission

The nationalised industries came in for passing comment in the course of the Debate on the working of the Monopolies Commission on July 23. Mr. READER HARRIS (Heston and Isleworth) took the President of the Board of Trade to task for not carrying out the Conservative Party's election pledges, one of which was quite definitely that they would see that the nationalised industries were brought within the purview of the Commission.

Let us have a Monopolies Commission, he said, which is going to probe into every restrictive practice. Let us have a jolly good look at the whole lot, and let us start with the big monopolies —the real, pukka monopolies—of these nationalised industries. He asked the Government to get on with the job of strengthening this Commission at an early stage, enlarging its scope and its powers, and bringing the nationalised industries and the trade unions under its purview.

Ridley Committee Report

In answer to a question by Mr. GERALD NABARRO (Kidderminster), Mr. GEOFFREY LLOYD stated on July 28 that he had that morning received the report of the Ridley Committee on National Fuel Policy, and he would like to congratulate and thank the Committee for having completed its work. The report would be presented to Parliament in the form of a Command Paper, which he understood would be available from the printers in about six weeks' time.

Fuel Oil Cheaper.—Shell Mex and B.P., Ltd., announced that from July 30 its inland trade price schedule for B.P. Britoleum (fuel oil) will be one-eighth of a penny a gallon cheaper. Britoleum is a furnace oil used in factories and workshops. The reduction in price will not affect the general public as the product is not sold by retailers.

Chemical Works Safety Conference

Points from the Papers

WE have received from the Association of British Chemical Manufacturers a copy of the Proceedings of the Fourth Chemical Works Safety Conference at Buxton, May 2 to 4. Three previous conferences of this nature have been held by the Association, one at Harrogate in 1948 and two at Scarborough in 1949 and 1950 respectively, all of which aroused considerable interest among safety people.

Two hundred delegates attended the 1952 Conference, and the papers were by recognised experts in their various fields. The consequent discussions brought out a number of interesting technical points. Copies of the Proceedings are obtainable from the Association (Intelligence Officer) at 7s. 6d. per copy, post free, cash with order.

A paper on 'Safety in the Laboratory and on the Plant,' by L. J. Burrage, PH.D., takes the form of an abridged safety handbook with sections dealing separately with the laboratory scale hazards and precautions and those encountered on pilot or full scale plants. The author considers that success on the safety side of working depends on interesting and educating every worker so that he becomes his own safety officer. The paper therefore deals at some length with the encouragement and education of the staff and workers.

After a general introduction the paper discusses team building as a basis for safety, the organisation of safety services and methods of instruction. The hazards common to the chemical industry—fire, explosions, burns and poisoning—and the protective measures to be taken against them are detailed, both on the laboratory and plant scale. Finally, the paper gives figures showing the effect of such precautions on casualty rates. The paper contains three tables, giving the potential eye risks and types of eye protection recommended, respirators for various gases and vapours, and a protective clothing guidance chart.

The effects of dust and fumes on workers in industry are discussed in a paper on 'Toxic Dusts in Industry,' by J. S. Evans, M.A. Larger particles are trapped in the upper respiratory tract, but smaller particles can penetrate to the lungs where pneumoconiosis, poisoning, and allergic reactions may occur. Measurement of dust concentration is made by the Owens jet apparatus or the Green and Watson thermal precipitator. Control should aim at substituting non-harmful substances wherever possible for materials which give rise to noxious dusts, and at preventing the dust from contaminating the atmosphere, and keeping the concentration low by good ventilation.

A paper on 'The Relation between Plant Strength and Dust Explosion Relief,' by Donald Matheson, M.A., PH.D., describes the type of plant which should be equipped with explosion relief apparatus and the effectiveness of such apparatus. The relative merits of bursting panels and explosion doors are discussed, and the question of designing plant to reduce the hazard is considered. The paper concludes by listing the organisations now carrying out research on this problem.

'Safety in Plant Maintenance,' by C. A. Beaton, M.B.E., is concerned mainly with the efforts of the maintenance department to provide safe working conditions. Maintenance should be considered in the development and design of new projects, as many possible sources of accident can be eliminated at the start. Safety in maintenance is a matter of care and concentration on the task in hand.

The responsibility rests not only on the supervisory staff who in initiating the work are expected to ensure that all foreseeable hazards are anticipated and brought to the particular notice of the worker, and that correct methods are adopted in performing the work, but also on the man doing the job who must follow the instructions given and adopt at all times the precautions provided for his safety. Details of the precautions which should be observed in connection with maintenance work are given.

Board Members Visit Liverpool

MEMBERS of the North Western Gas Board paid their first official visit to the Liverpool Group, when they were welcomed by Mr. C. H. Leach, General Manager of the Group.

It was an extensive tour of the various sections, and at each Mr. D. P. Welman (Chairman of the Board) spoke to the employees and assured them that although that was the first visit of the Board, Liverpool should accept that as a compliment. When the Board took over more than a hundred different undertakings the problem of welding them together into groups was far more difficult elsewhere than in Liverpool where integration had been an accomplished fact for years.

Of nationalisation, Mr. Welman said they intended to keep all the good of private enterprise and combine it with the opportunities for increased efficiency which integration offered. It was the Board's aim to make the organisation function smoothly and efficiently without losing that personal contact which was so necessary. Stressing the efforts that should be made to attract young men into the industry, Mr. Welman said the line of promotion was open right up to the chairmanship of the Board.

British Standards Institution

AT the annual general meeting of the British Standards Institution on July 23, it was announced that the General Council had elected Mr. John Ryan, C.B.E., M.C., as its Chairman to succeed Sir Roger Duncalfe, who had completed his three years term of office. Viscount Waverley was re-elected President of the Institution for the third year. Sir Roger Duncalfe was elected Vice-President.

Sir Roger's term as Chairman had coincided with the Institution's period of most rapid growth, and his acceptance of the Vice-Presidency reflects his continuing and active interest in the Institution's work.

As Chairman of British Glues and Chemicals, Ltd., Sir Roger Duncalfe is widely known in industry. He is past Chairman and past President and now a Vice-President of the Association of British Chemical Manufacturers, and a Vice-President of the Federation of British Industries.

The new Chairman, Mr. J. Ryan, is Vice-Chairman of the Metal Box Co., Ltd., and he has for many years played a leading part in the standardisation policies implemented through the B.S.I. by the packaging industry.

FINED FOR RIVER POLLUTION

FOR polluting the River Forth at Stirling, the Scottish Gas Board was fined £30 by Sheriff Murray at Stirling Sheriff Court on July 21. The Board pleaded guilty to having at its Stirling gasworks on various occasions between February 21 and March 25 permitted to flow into a drain communicating with the Forth, a tar substance whereby the river was fouled contrary to the Gas Act, 1948.

Fiscal said a salmon net fisherman complained to the Forth District Salmon Fishery Board that his nets were being fouled by tar and scum flowing down the river. This particular tar was corrosive and destroyed the fabric of the net. Fumes which the substance could give off, particularly in hot weather, brought danger to salmon parr and smolts.

The effluent was traced to a drain near the ordnance depôt at Stirling, and there could be no doubt that the substance was coming from the gasworks. Mr. A. Ramsay (solicitor for the Gas Board) expressed the Board's regret for the fouling of the river, explaining that the filtering arrangements at Stirling gasworks had always been up to date, and the tarry effluent came from an auxiliary plant only used to augment the supply during heavy winter loads. The filters there had been fouled due to overloading. This was very unusual, and he attributed it to inferior fuel supplied by the Coal Board.

CONSULTATIVE COUNCILS

Steel for West Midlands Gasworks

A DECISION to urge the Government to allocate more steel for gas plant construction in the West Midlands was taken at a meeting of the Gas Consultative Council sitting at Birmingham on Monday, July 21. Mr. Seymour Brown presided in the absence of Councillor W. H. Malcolm. It was stated that not half enough steel was received to meet the needs of the region. The opinion was expressed that the steel position was likely to become easier.

From the Worcestershire and Herefordshire division a resolution urged that as it was held in some responsible quarters that supplies of steel would be easier this autumn the Consultative Council should bring pressure to bear on the Ministry of Fuel and Power to increase supplies of steel to the gas industry and particularly to the West Midlands.

The Chairman said they were already pressing their claims for steel in order that very necessary works for the gas industry might be carried out.

Priority Schemes

Mr. G. le B. Diamond (Chairman of the West Midlands Gas Board) said that over a number of years the Board could use 25,000 tons of steel per annum. At present steel is allocated to the Board at the rate of only 11,600 tons per year. The Board was concentrating on finishing plants at Swan Village (Birmingham), Coventry, and Stoke as well as concentrating on some very important extensions which were required in the national interest.

Some of the larger projects were affected and delay was inevitable. Firstly, the gasholders at Kingswinford, Worcester, Smethwick, and Walsall were not proceeding; secondly, the installation of manufacturing plant at Smethwick would be delayed by 12 months; thirdly, no steel would be available for the extension of the Walsall works for at least 12 months and probably longer, and, fourthly, the installation of the 11 mill. cu.ft. C.W.G. plant at Nechells, Birmingham, had already been delayed by one year and the delay might be extended.

The Chairman said they were not getting half the steel required in the area and no harm would be done by pressing the resolution.

Situation Easing?

One member thought it was inopportune to press this matter in view of the steel strike in America, but another thought no opportunity should be lost of pressing the claims of the Midlands.

The Chairman said there was a feeling in some quarters that the steel situation was easing and if so it was right that the gas industry should get in as soon as possible and make its demands felt.

The resolution was carried.

Mr. A. Maddocks (Stoke-on-Trent) offered congratulations on the success of the negotiations undertaken by the North Staffs. Chamber of Commerce. He understood that in future the local undertaking would use its own coal and according to the figures there should be a saving of 0.29d. He wanted to know if this was going to be passed on generally to consumers.

Mr. Diamond said they would have to wait and see what happened and they would then be in a position to judge. The Board, however, very much appreciated the action of the North Staffs. Chamber of Commerce in negotiating for the Board and congratulated them on their success in this fight where previously the Board had been unsuccessful.

Eastern Price Stability

ALDERMAN R. TURNER, Chairman, told the Eastern Gas Consultative Council at its meeting at the Connaught Rooms, London, on July 21 that the Eastern Gas Board did not at present contemplate making a further increase in gas prices. He recalled that when gas prices were raised throughout the area last December the Consultative Council asked the Board to consider the possibility of stabilising tariffs for at least six months. In March the Secretary informed the Council that the Board had decided to postpone a further review of gas prices until July, subject to there being no substantial increase in costs in the meantime. The Board had recently been considering its draft accounts for the year ended March 31, 1952, and 'the financial forecast for the current year. 'I feel I must emphasise,' added Mr. Turner, 'that the Board's financial position is such as to necessitate immediate consideration of its revenue position should any appreciable increase in costs occur.'

Rising Freight Charges

By increased efficiency and economy the Board had succeeded in maintaining its present gas prices, but it would be appreciated that these could only continue to remain stable if the prices of raw materials and wages did not rise. Recently the Board had been notified that freight charges on sea-borne coal had been increased as from June 23 by either 1s. or 1s. 2d. per ton dependent on the location of the receiving gasworks, and this item would mean an additional expenditure of £25,000 per annum. The gas industry had a wages claim pending for manual employees and it could be anticipated that this would be followed by a claim from the staff unions. If these succeeded they would have a material effect on future costs.

Another prerequisite for the maintenance of gas prices at their present level was the need to keep gas sales at least at the 1951-52 level. Unfortunately sales showed a decrease of 6½% in the June quarter this year compared with the corresponding quarter in 1951.

Fall in Consumption

The Council received the Chairman's statement with some satisfaction, but expressed concern at the decrease in consumption during the June quarter. No figures were available to show how the decrease was distributed as between industrial and domestic consumers, but it was generally felt that a recession in trade had been reflected in reduced gas consumption in workshops and factories. So far as the domestic side was concerned, a lady member attributed the decrease to the growing number of people going over to electricity. She confessed that she was one of these. Higher prices charged for gas were blamed for part of the decrease.

It was agreed to ask the Board to provide the Council with detailed figures for all the five divisions.

Coke Supplies

The Chairman informed the Council that the Ministry of Fuel and Power had agreed to certain important relaxations in the supply of coke to consumers. The effect of these was that the domestic consumer who normally obtained a licence for additional supplies at the time he actually required them could now obtain a licence from his local fuel overseer to take the whole of this additional tonnage during the summer months if he so desired. This concession applies only to licensed quantities of coke quite independent of the maximum permitted quantity of one ton during the summer six months and one ton during the winter six months. All other classes of consumers—*i.e.*, industrial, hospitals, local and county councils, etc., could take into stock during the summer the whole of their winter requirements of coke.

The information had been passed forward to the districts for appropriate action, and some response was being obtained inasmuch as additional supplies of coke were being called for by consumers.

A proposal had gone forward to the Ministry from the Gas Council, follow-

ing a recommendation from the Coke Committee, for certain further important concessions in regard to domestic coke supplies. The alterations recommended were:—

(a) An amendment to the definition of Group 1 fuel so as to include coke other than boiler nuts as well as house coal, coalite, etc. If this was agreed permission would be required for consumers who so desired to register with a gasworks for both Group 1 and Group 2 fuel, or for either of them.

(b) The maximum permitted quantity of Group 2 fuel for the coming winter to be increased to 30 cwt. with the proviso that not more than 20 cwt. should be taken in Group 2 fuels other than coke.

An Important Change

Mr. Turner pointed out that recommendation (a) was of no little consequence and was something for which the industry had been striving for a number of years, since it would enable the coke consumer—*i.e.*, the person who installed a coke grate in addition to his coke boiler, to obtain adequate supplies of coke without the need as at present of going to his local fuel overseer to obtain a licence for an additional quantity. In other words he would be able to opt to take his allocation of Group 1 fuel—*i.e.*, house coal as coke.

Referring to the supply position in general, the Chairman said stocks in the area as a whole were steadily rising, but at no unduly rapid rate; in fact at the present rate of progress it was not likely that the Board's works as a whole would hold by October 31 the amount of stock which was really desirable to meet possible winter requirements. Present stock building was due largely to the amount of coke being brought into the area from adjacent areas where there were more than adequate stocks available. It was possible that one or two works, particularly the smaller ones, would run into some difficulty later in the summer mainly because of the fact that they had no screening plant, a fact which seriously limited the purposes for which their coke could be used.

Taking stocks in the country as a whole, concluded Mr. Turner, if they were evenly apportioned between the areas in strict relation to the annual production of each, the Eastern area would be holding 10,000 tons more coke than it was actually holding today.

A Price Problem

The Tottenham Divisional Committee asked if investigations could be made as to the reasons for variations in the price of identical boiling water heaters. A Palmers Green consumer had raised the question. He had enquired the price of an Ascot boiling water heater from three area boards. They were: North Thames, £18 7s. 6d.; Eastern, £19 13s. 11d.; South Eastern, £20 0s. 5d. (all excluding fitting). In view of the difference in price the consumer had telephoned the Gas Council and had been informed that each area board arranged its own prices. The divisional committee was concerned to note the difference in price, assuming that each board could buy appliances from the makers at the same price.

The Chairman said the three boards had approved uniform profit margins and the price should therefore be the same, but he promised to take the matter up with the Board.

Another complaint referred to in the report of the Tottenham Divisional Committee was that of an Enfield consumer who had been charged 11s. by the Eastern Electricity Board for attaching a plug and testing an existing power point in connection with the installation of a gas-electric washing machine. He considered it an exorbitant charge for less than 11 minutes work. The matter had been referred to the Eastern Electricity Board who had replied that it was a standard charge. The consumer had paid under protest and asked the Consultative Council to look into the matter.

The Chairman said he had referred the complaint to the Eastern Electricity Consultative Council and its reply was awaited.

Two-Part Tariff

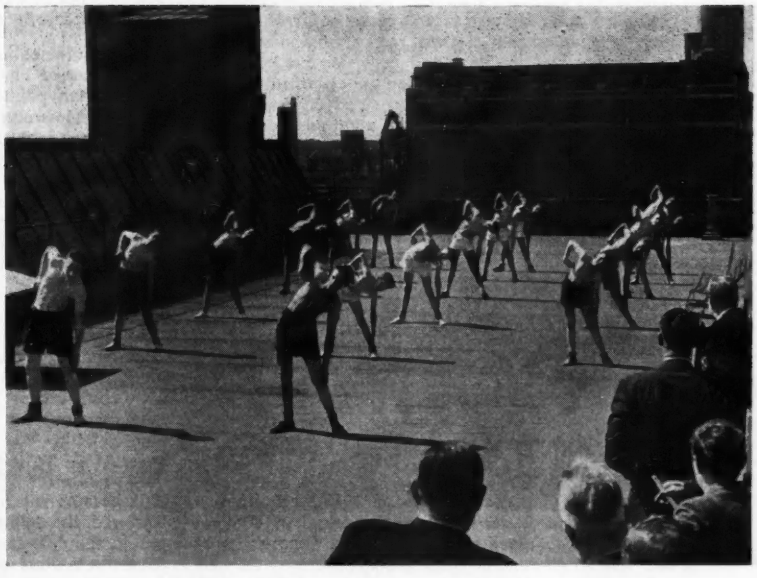
The minutes of the Cambridge Divisional Committee recorded that the Chairman of the Committee, Alderman F. Doggett, had received from the Eastern Electricity Board a circular letter intimating that he would be better off if he paid for his electricity under the domestic tariff instead of the two-part tariff. Alderman Doggett felt the Electricity Board was much ahead of the Gas Board in this respect, and suggested that similar letters should be sent out by the Gas Board.

The divisional committee had been reminded by Alderman Turner, Chairman of the Consultative Council, that a suggestion was made at a meeting of the committee a year ago that the two-part gas tariff should be made known to all consumers who by reason of their consumption were qualified to be charged under the tariff, and that it should not be left to the consumer to apply to be charged under the tariff. The Gas Board had expressed confidence that the local staff would bring the advantages of the two-part tariff to the notice of individual consumers. To reassure the committee that the Board was prepared to do this arrangements would be made for the divisional general managers to be informed accordingly.

Mr. Herbert Albones has completed 50 years' service at Horncastle gasworks, where he is still employed at the age of 77, and Mr. Sydney Smith, Chairman of the East Midlands Gas Board, recently presented him with a wallet and cheque in appreciation of long and faithful service. He has served under six managers as assistant stoker and general handyman and claims to have done all the jobs at the works except that of resident manager.

APPRENTICES 'AT HOME'

MORE than 100 parents attended the annual 'At Home' held recently by the North Thames Gas Board's apprentices at Watson House. After being welcomed by Mr. R. N. LeFevre, the Board's Training and Education Officer, the visitors were shown round the workshops, training shops, and lecture rooms, to see the boys working and to examine examples of their craftsmanship which were displayed. This tour of the premises, which also included the Watson House Exhibition Hall, followed an exhilarating display of physical training by the apprentices under the leadership of apprentice Ron Palmer.



The physical training demonstration on the roof at Watson House

RECONSTRUCTION OF HOWDON GASWORKS

By J. E. McMANUS,
Howdon-on-Tyne.

Presidential Address to the Northern Junior Gas Association

IT may not be unique, but it is certainly unusual, to have two completely new works constructed on practically the same site within slightly more than 40 years. In 1905 the then Walker and Wallsend Union Gas Company was faced with the necessity of increasing manufacturing capacity. For this purpose a virgin site of 12.5 acres, which represents the eastern half of the present works area, was purchased, and as the total storage capacity was only 750,000 cu.ft., with a maximum daily output of 1,500,000 cu.ft. the first requirement was a new gasholder. The holder chosen was of 1 mill. cu.ft., guide framed type, with tank below ground. The first sod was cut on November 1, 1905, and the holder, constructed by Clayton, Son & Co., was made ready for service in September the following year. This holder is now scheduled for use as relief holder for the new carburetted water gas plant approaching completion.

General development of the site commenced in July, 1906, and a works capable of producing 1.5 mill. cu.ft. per day came into production in May, 1908, though it was not officially opened until October of the same year. The gas producing plant consisted of a brick built retort house containing two benches of six settings of eight 22 in. by 16 in. D section retorts with inbuilt producers. Planning of the works with an ultimate output of 6 mill. cu.ft. per day from two retort houses, each containing four benches of six settings each, showed considerable optimism and foresight on the part of the company's engineer at that time. His choice of such small benches must have evoked considerable comment from his fellow engineers but, after a service of more than 40 years, the benches and buckstays showed very little distortion and reflected the wisdom of his choice.

Duplication of Plant

Ancillary plant generally was of a capacity equivalent to the retort house production but a twin rotary ammonia washer of double capacity was installed and provision made for the duplication of all other plant. Power for the electrically driven charging and other machinery was provided by gas engine driven generators and, in spite of all the additions and alterations made to the works during the past years, internal production of all electrical current was retained until quite recently.

The natural contours of the site were utilised to the fullest extent to provide gravitational flow to all tar and liquor lines by placing the main storage wells at the extreme south east corner of the site. These wells were of such generous proportions that they have been accepted as adequate for the new works. Railway access was also at the lowest level of the works, and while this did create some difficulty in the handling of coal to the breaking plant and store adjacent to the retort house it gave the opportunity of providing a low level loading deck below the coke yard for loading of rail trucks and the advantage of this latter facility has to be experienced to be fully appreciated. In later years the ability to load stock coke quickly made the works an excellent source of supply for shipment demands.

Benzole extraction plant was installed in 1917, and although it only provided a crude spirit of little more than 80% at 160°C. it continued to operate with very little supervision or maintenance until a short time ago. Development of the carbonising plant was undertaken between 1919 and 1920, with the construction of a third bench of six settings and the necessary extension of the retort house building. About this time a second coal store, capable of accommodating over 2,000 tons, was erected alongside the original store and fitted with an electric overhead grab crane.

An unusual feature for a gasworks was the introduction of a water reservoir, having a capacity of 430,000 gal., for the collection of surface drainage from part of the works area for use on coke quenching. Suitable filters were an inherent part of the reservoir system and dealt with the surplus water returned from the coke quenching sprays. Saving in water consumption was considerable and fully justified the monetary outlay incurred.

The final association of this works with the Walker and Wallsend Union Gas Company terminated in 1925, when amalgamation with its much larger neighbour, the Newcastle and Gateshead Gas Company, took place and the unit became a small cog in a much larger machine.

Modernisation of the sulphate of ammonia plant was the first improvement undertaken by the new owners and little further development of the works took place until 1930, when construction of a 3 mill. cu.ft. capacity, four lift spirally guided holder with tank above ground was begun. In fairly quick succession over the next six years additional items of ancillary plant installed included one set of ground level purifiers, capacity 1½ mill. cu.ft., two ½ mill. cu.ft. per hour turbine driven boosters, and new coal charging and hot coke transporting machines. A 10,000 lb. per hour waste heat boiler was coupled to the retort house waste gas flues and oil washing capacity was doubled. The first electrostatic detarrer to be installed in a gasworks in the North East of England was put into service in the Howdon works in 1936 by Simon Carves, Ltd. In the same year a West's gravity bucket elevator, complete with coal teeming hopper and breaker below ground, was erected at the extreme south end of the retort house to feed the existing push plate conveyors and continuous coal storage bunkers in the retort house. Possible extension of the retort house was still in mind at this time and sufficient space was left to accommodate a fourth bench if required.

The aforementioned coal handling plant is one of the few items retained in the new layout and actually formed one of the fulcrum points on which the new coal handling system hinged. Messroom facilities were never comparative with the general standard of the works until 1939, when a new building was erected on modern lines, and included a large messroom, locker and ablution rooms, adequate toilet accommodation, and a first-rate ambulance room. To give duplication of the gas stream between exhausters and meters a 3 mill. cu.ft. capacity static ammonia washer was added shortly after commencement of the second world war.

By increasing the weight of coal charges and carbonising temperatures and reducing carbonising periods the maximum daily output of the works was boosted to approximately 3 mill. cu.ft. gas per day. The works was then considered to be fairly efficient and capable of putting gas into the holder at reasonable cost, except of course when forced to exceed normal maximum outputs.

Post-War Developments

It became increasingly evident during the last year of the war and the immediate post-war years that the demand for gas in the Newcastle area was rising to such proportions as to cause serious concern, and consideration had to be given to any expedient that would provide additional gas quickly. The temporary measures adopted at the five works concerned were too numerous and diverse to be included here, but the unusual method adopted at the works under consideration warrants description. Coal gas production was pushed to the limit by reducing carbonising periods from 12 to 8 hours

with only a slight lowering of the weight of charge, increasing carbonising temperatures beyond normal limits, and using maximum quantities of producer gas diluent. The producer gas plant was the only productive unit working below its full capacity, and a method was devised to enrich this low quality gas by using a medium which was more or less easily obtainable —namely, refined benzole, crude spirit being considered unsuitable owing to its sulphur content.

Selection of a suitable point for spraying the benzole into the gas stream was simplified by the oil washers being out of service, as far as benzole extraction was concerned, during the periods that spraying was required. One of the rotary oil washing units was emptied and spray nozzles were fitted to the inlet main and first two chambers. Atomisation of the spirit was accomplished by using the smaller nozzle normally used by a local firm on their system between 100 and 120 lb. per sq. in. and preheated to a temperature of approximately 160°F. Unvapourised benzole was deposited in the last two bays of the washer.

Enrichment had to be applied to the whole of the gas output from the works owing to there being no means of applying the benzole to the producer gas alone before the latter was fed to the main coal gas stream. In practice it was found possible to add an amount of benzole to the gas equivalent to that already contained in the gas as it left the carbonising plant. By this admittedly expensive method of production the output of the works was increased by at least 250,000 cu.ft. on days of peak demand.

Normal maximum daily capacity of the works was 2¼ mill. cu. ft., but during the winter of 1950 a record output of 3.66 mill. cu. ft. was obtained, and it was not uncommon to keep up an average output of 3¼ mill. cu. ft. for weeks on end.

Some appreciation of the magnitude of the problem that faced the Newcastle company can be derived from the following maximum daily outputs:

	cu. ft.
1938	33,290,000
1942	41,218,000
1946	50,550,000
1950	60,825,000
1951	63,529,000

It is obvious from the above figures that major developments would have to be undertaken. The first of these was the provision of a base load plant to take the strain from the already overtaxed production units, and the site selected for this plant was the existing Howdon works. Discussion of all the factors which lead to the selection of the site would be too controversial to be included in this address, but I would like to mention two of the most important—namely,

(a) Adequate ground area in and adjacent to the works.

(b) The projected tunnel under the River Tyne between Howdon and Jarrow.

The latter provided the vital means of transferring some of the additional gas produced to the south side of the river, and the necessary provision has been made in the pedestrian and cycle tunnels for high pressure gas transmission lines.

The New Works

Additional land for a proposed third gasholder and a new coal stocking area was purchased on the western boundary of the existing works, and together with a further small amount required for increasing the capacity of the sidings, the total acreage of the works rose from 14.33 to about 21.5.

The type of carbonising plant selected was intermittent vertical chambers with a total capacity of 8 mill. cu. ft. per day. Four small benches capable of producing 2 mill. cu. ft. per day each were planned, thereby repeating the compactness of the carbonising units associated with the old plant.

A 4.5 mill. cu. ft. fully automatic carburetted water gas plant is included for peak demands, with provision for a duplicate unit in the same building.

The coal handling plant, chamber houses, coal storage bunkers, producer gas plant, and water gas plant have been designed architecturally as a whole with white facing brickwork covering all steel framed buildings and so blending with concrete structures where these are necessary. While the buildings are strictly industrial in design, a very pleasing appearance has been achieved on modern lines, and a particularly striking feature is the abundance of glazing provided.

The total daily gas output is divided into two streams of 4 mill. cu. ft., each stream being complete with its own primary and secondary multipass condensers, Connersville exhauster, electrostatic detarrer, ammonia washer, and section of purifiers. A spare unit of all the aforementioned ancillaries, with the exception of purifiers, is provided for use on either stream.

Both streams combine after metering for the purpose of benzole extraction and mix shortly afterwards with the water gas stream before entry to the holder.

Two separate mixing bunkers, constructed in reinforced concrete, are each divided into three compartments for the storage of different classes of coal after passage through the breaking plant. These bunkers and attendant breakers and gravity bucket elevators are duplicates of each other except that in one case an existing breaking and elevating plant has been incorporated.

Proportioning and mixing, as distinct from blending, of the chosen coals are achieved by the use of cubi-meters on each bunker. These cubi-meters can travel on a track below the bunker outlets and be positioned for receipt of coal from any of the discharging doors. These machines do not weigh the coal but provide a stream of coal with a regulated cross-sectional area and known rate of travel, thus allowing the desired percentages of selected coals to be fed onto a common conveyor running past the discharge points of the meters.

Handling of all coals from the bunkers to the main storage bunkers, adjacent to the chamber houses, is by belt conveyors. Fairly intimate mixing of the coals takes place at the various transfer points between one conveyor and the next, together with the final discharge into the main bunkers. The latter bunkers, one to each of the four benches, have an in and out capacity of 270 tons per bunker which covers carbonising requirements for 48 hours. Including the mixing bunkers the total stocks in bunkers can meet five days of maximum gas production. A special compartment has been included in one of the main bunkers for the purpose of obtaining large scale coking and behaviour tests on various coals.

Carbonising Plant

Special weighing machines are incorporated in the overhead running tracks of the four coal charging cars which serve the benches, and each charge can be weighed and recorded, thus providing an accurate assessment of the weight of coals carbonised. The four benches, each containing three settings of six chambers, are fired by clean hot producer gas generated in external self-vaporising mechanical producers. Three of the four producers installed will provide all the necessary producer gas for the carbonising plant and all the diluent necessary to reduce the coal gas to the declared calorific value of 475 B.Th.U. These producers are housed in a separate building and are fitted with fully automatic electrically controlled coke feeding gear.

Producer gas supply to each setting of six chambers is controlled by seven hot gas valves, thus giving a most accurate and simple control of the heating flue temperatures.

Automatic variation of the added diluent is provided by a special Sigma calorimeter coupled to a governor controlled butterfly valve which is situated between the diluent exhauster and the foul mains.

Each bench of chamber ovens is provided with a coke wharf for reception of coke after quenching for cooling and possible spot quenching. Sufficient storage is available on the wharves to allow the coke handling and grading plant to operate for only two eight-hour shifts per day. This will greatly facilitate the carrying out of repair and maintenance work without undue interruption of the carbonising process.

Coke transfer from the wharves to grading plant is entirely by belt conveyor, and inserted in the conveyor line is, what I think, a very useful help to the correct assessment of works results—namely, a conveyor weighing machine capable of recording the gross output of coke from the plant. A similar machine has also been incorporated in the return conveyor line from the grading plant to the producers and water gas plant. These refinements should leave little doubt as to the actual coke consumptions of the various plants.

Of particular note on the more or less normal static type ammonia washers is the addition of two oil washing bays at the outlet end for removing final traces of tar fog from the gas streams before entering the purifiers. It is hoped by this means to reduce hardening of oxide in the boxes.

The four purifier boxes contained in each of the three sections serving the coal gas and water gas streams are of the overhead type, 40 ft. by 30 ft. by 8 ft. deep. Each box contains two layers of flat grids, and the only special features are the all-welded steel construction with box pattern lids and three-way control valves. These composite valves are fitted to the inlet and outlet of each box and permit of eight variations in the gas flow through the box.

Steam Supply

Works steam requirements are divided into three different pressures—namely, 300, 100, and 15 lb. per sq. in. The first is provided by four waste heat boilers, with two standing spares, and the last, used for process purposes, is the pass out steam from the vertical compound engine drives of the exhausters and the turbo-driven alternator. Three existing Lancashire type boilers with forced draught furnaces supply most of the requirements of the 100 lb. per sq.in. lines with supplementation from the 300 lb. per sq.in. line *via* a reducing valve when any surplus high pressure steam is available.

A turbo-alternator, driven entirely by 300 lb. per sq. in. waste heat steam, and having an output of 530 kW at 415 volts provides power for all drives in the works, with the exception of the exhausters and boosters. Included in the alternator output control is synchronisation mechanism to handle an anticipated surplus to the grid.

To economise in the large water demands of the plant a water cooling tower with a capacity of 179,000 gal. per hour from 105°F. to 80°F., with a wet bulb temperature of 60°F., is provided. The tower is of the chimney type with a combination of natural and forced draughts. The former should take care of winter conditions and two motor drives of 15 H.P. and 45 H.P. for the fan provide the intermediate and maximum associated with spring or autumn or summer heat waves respectively.

Belt conveyors are provided to transfer all ash and clinker discharged from the mechanical producer grates and the water gas generator to a storage hopper via a skip hoist. Small buffer hoppers with vibratory feeders between their outputs and conveyor obviate continuous running of the conveyor and hoist.

Layout of the works as now constructed is the result of many preliminary schemes all of which took full cognizance of the imperative need of maintaining the old works at maximum output, especially during the winters of the constructional period. Preservation of a symmetrical layout, without having the plant spreadeagled over an unnecessarily large area, entailed siting the carbonising units on the immediate west side of the old retort house and coal stores, and what was then the outside stocking ground for coal.

As a preliminary to commencement of excavation work 3,500 tons of coal stocks lying in the open had to be used up, together with the major portion of the 2,000 tons stocked in No. 2 store, in order that dismantling of the latter building could be undertaken. Eventually coal stocks were reduced to the contents of retort house hoppers and No. 1 store, and for practically the whole of the period of construction of the new works coal reserves were approximately 1,400 tons, or slightly less than one week's carbonising requirements on maximum output. At one period coal stocks fell to half this amount.

Coal supplies to the store were conveyed by railway wagons up an embankment and over a viaduct to the overhead gantry in No. 1 store. Retention of this inclined railway was necessary for continuance of production during certain stages of the reconstruction programme, and owing to its fouling the sites of one of the chamber houses and a new set of purifiers, sections of the railway had to be diverted. Only those who have been faced with the uprooting and re-siting of a very old railway track, re-using the old materials, can appreciate the difficulties of providing even a reasonable railroad. It is no reflection on those who undertook this work when I say that more thrills could be obtained when riding the locomotive on this track than are provided by some scenic railways at fun fairs.

The 12-in. diameter main drain handling all effluent and surface drainage from the original works had, over the passage of years, become heavily encrusted internally and was an ever-present source of trouble. Complete renewal was deemed advisable, and a new drain, laid more or less parallel with the old, was completed in the first month of 1949.

Water Supply

Preservation of the water reservoir was not possible, and on putting this out of commission for dismantling a serious discrepancy in the pressure of the service water supply to the works was revealed by the additional demands created by coke quenching. At certain periods of the day the pressure was so low as to be incapable of maintaining stocks in the overhead water storage tank. To overcome this difficulty a temporary ground level intermediate storage tank had to be installed, complete with pump to transfer the water to the overhead tank during times of low pressure. Fortunately it had been foreseen that the existing water service to the works would be inadequate for the heavier consumption of the new plant, and prior to embarking on the reconstruction scheme arrangements had been made with the Newcastle Water Company to lay a new and larger main about three miles long as the new works progressed.

Excavation work for the foundations of the new carbonising units commenced early in April, 1949, and progressed steadily throughout the remainder of the year with very little effect on the actual production of the old works, except for the loss of half the electricians' shop with its cramping effect on maintenance.

Before proceeding with the foundations for No. 1 mixing bunker a diversion of the main tar and liquor lines between the old retort house and storage wells became necessary. This work had to be accomplished with the old plant on full production and was not without its anxious moments. Diversion of certain gas and water mains was also necessary, together with some underpinning of the trestles supporting the West's gravity bucket elevator.

The base slab of the new water tower intruded into the embankment of the railway supplying the remaining coal store to such an extent as to endanger the safety of the track. To enable the track to continue in service for at least another 12 months, long steel joists were placed beneath the sleepers

of the track, and the load on them was transmitted to a lower level by special timber grillages built into the embankment.

During 1950 the building of carbonising plant, coal bunkers, producer foundations, and the first two sections of purifiers gained impetus and attained a satisfactory state of construction. The start of foundation work on the coke bunkers in August of that year meant a long period of difficulties in connection with the stocking of coke. Siting of the new bunkers on the eastern half of the existing coke storage ground reduced the stocking capacity of the works to about one-fifth, or approximately 600 tons. An electric travelling grab crane with a 66 ft. jib had its track centrally placed in the coke yard and alongside the coke loading dock, with the new bunkers positioned on the opposite side of the track to that occupied by the dock. The rather deep excavations for the new loading dock and bunkers caused some settlement of one side of the crane track with subsequent trouble with electrical pick-up gear and crane stability.

Towards the end of 1950 the impact of reconstruction began to make itself felt in a part of the existing works which had hitherto been fairly immune—namely, wet purification units and metering. To make room for one of the new ammonia washers dismantling of the existing twin rotary unit was undertaken and one condenser and the wet station meter were also removed. The latter was housed in a building set aside for the new Connersville meters. From the constructional engineer's point of view much greater disturbances of the existing ancillary plant were necessary to comply with the scheduled date of November 7, 1951, for commencement of gas production. An already badly shaken works, however, had to be left in a distorted form of peace during the first few months of 1951 to meet the maximum production demands made upon it.

'D' Day

In view of the enforced delay in progress on the erection of some of the ancillary plants and connecting mains a concentrated programme of dismantling and alteration was planned for early in May and the seventh of that month took the form of a miniature 'D' Day.

The most vital piece of work which commenced on that day was the severance and removal of the railroad, together with its embankment, which served No. 1 store. This allowed work on No. 1 section purifiers to start together with the feeder mains to the other two sections. Loss of this railroad prevented supplies of coal reaching 'A' bench of the old retort house, except from the meagre stocks in the store. These stocks were needed for a period later in the year when the main elevating and breaking plant would be out of service, and in consequence gas production was reduced by the capacity of one bench. The railroad had also curtailed progress on the new coal store and its feeding point.

At this stage the gas stream was diverted through an old Livesey washer instead of the electrostatic detarrer in order that the latter could be removed from the site and replaced by a third new unit on a new foundation. Incidentally the transformer house for the old unit was found capable of comfortably accommodating the three transformer units for the new vessels.

Centralisation of exhausting, boosting, compressing, and power plant, with its economic supervisory staff, had always been a feature of the old plant, and the retention of this feature was planned from the outset. The existing exhauster house was a very roomy building with a large unoccupied area at one end where some old gas engine driven generators had once been sited. It was on this latter area that the new exhausters were positioned, leaving the remainder of the house for the turbo set with a suitable isolating screen between. Work on the foundations for the alternator could not proceed until the old exhausters were removed. To expedite this work it was arranged to use the new exhausters and one of the new purification streams for handling the gas produced on the old plant, until such time as the new plant was ready for service.

A specially constructed steel collecting box was fitted between the exhaust lines of the new and old systems to accomplish the change-over. Although the engine drives of the exhausters were designed to function on 300 lb. per sq. in. steam pressure only steam at 100 lb. per sq. in. would be available for the interim period, but assurance was obtained from the makers that the units would handle the required gas throughput at the steam pressure available. Towards the end of August the temporary arrangement described came into service and shortly afterwards the old exhausters were removed.

Shortage of reinforcing bars in the middle of 1951 considerably slowed the progress of the construction of the coke storage bunkers and made their completion by the scheduled date virtually impossible. It was essential, however, that the new producer feeding conveyor be ready for the period when the producers would be used for the second stage in the heating of the new batteries. In direct line with this particular conveyor was a brick built chimney serving all benches in the existing retort house and into which the existing waste heat boiler flues were coupled. Continued steam production from this particular boiler was considered necessary, and to accomplish this, and allow construction of the conveyor to proceed, about 15 ft. of the top section of the chimney was removed and replaced by an L-shaped steel section.

Provision had already been made in the design of the producer and carburetted water gas coke conveyor system for the inclusion of a small separate steel feeding hopper to be supplied with external coke or coke from stock, by the existing grab crane. The existence of this facility greatly offset the serious setback that could have occurred by the delay in construction of the main hoppers and screening plant. Revision of the main coke conveyor programme was also necessary and the stocking conveyor had to be given priority in order that it would handle all the coke from the new batteries when they came into production. Where the stocking conveyor passed over the existing coke elevating plant a temporary tubular steel support was inserted in place of the permanent concrete trestle until such time as the old plant could be dispensed with.

Up to Schedule

The employment of external producers for normal heating of the settings necessitated using rich coal gas for the initial stages of drying out and heating up. Special burner equipment was inserted in all the producer gas ports feeding each setting and firing commenced early in August, 1951, on 'C' and 'D' batteries, and slightly less than one month later on 'A' and 'B' batteries. With heating flue temperatures approaching 1,000°C. after the expiry of seven weeks, the former two batteries were changed to producer gas firing for the remaining period to November 8, when gas-making commenced exactly in accordance with schedule. The full significance of this achievement in these days of shortage of materials and extended delivery periods can only be appreciated by reference to the following:

Order for carbonising plant placed with Gas Chambers and Coke Ovens, Ltd., November 23, 1948.

Work on site commenced April 1, 1949.

Gas-making schedule to commence November, 1951.

Production on the old horizontal retorts ceased on the day the first of the new batteries was charged. As a precautionary measure temperatures were retained in the settings for a further few days and then allowed to die down. So ended the life of a plant which had given excellent service and so starts a new era in the life of Howdon works.

According to the President of the Freeport Sulphur Company, the world sulphur shortage appears to be approaching its end. It seems that practically all the U.S. requirements are already being met and at the same time there are nearly a hundred new projects for increasing production in the U.S. and other Western countries, which, it is estimated, will add more than 4 mill. tons a year to present sulphur supplies by the end of 1955.

Appliance Approval in the States

By CHARLES E. BENNETT President, American Gas Association,

and

EDWIN L. HALL, Director, American Gas Association Laboratories.

Paper to the Fifth International Gas Conference, Brussels

THE American gas industry is now the sixth largest in the United States. It represents an investment of approximately $9,000 mill. and is one that is rapidly increasing despite its past rapid growth. Gas is distributed by some 1,000 utility companies through 388,000 miles of field, transmission, and distribution mains. These serve about 24,500,000 customers. In addition, some 7,500,000 customers not on the lines of gas mains are served with liquefied petroleum gas. Altogether the combined industry serves some 32 mill. customers scattered from the Atlantic to the Pacific and from the Mexican border to the north woods of Canada. Assuming three persons per family, almost 100 mill. persons, are now depending on gas service and gas appliances for their everyday cooking and heating needs.

Records for 1950 show, for the United States alone, 70 companies manufacturing gas ranges, 84 producing water heaters, 104 manufacturing room heaters, and 192 producing what is known as central heating equipment, this including steam and hot water boilers, warm air furnaces, and floor furnaces. Ranges, water heaters, room heaters, and central heating appliances represent the types most widely used. In addition, other appliances such as clothes dryers, incinerators, unit heaters, and duct furnaces, as well as commercial cooking equipment, are produced by these and other manufacturers. Some of these manufacturers may produce one model only, while in the case of the larger companies a wide variety of types is fabricated.

Latest figures available indicate sales of more than 9 mill. domestic gas appliances for 1950. Ranges were in the majority with 3 mill. units sold; automatic water heaters followed with sale of over 2,300,000; more than 2 mill. direct space heaters were sold; and over 1 mill. central heating units were added by the utilities' customers. In the absence of exact figures it is reliably estimated that over 28 mill. gas ranges, nearly 15 mill. automatic storage water heaters, and almost 9 mill. central heating installations are in service. Gas ranges vary from small, manually lighted cookers to completely automatic units equipped with time and temperature control, high broiler, and automatic ignition throughout. While water heaters of the automatic storage type predominate in recent installations, a large number of other models, including manually controlled side-arm units, are in use. Central heating units are divided between steam and water boilers and gravity and forced warm air furnaces.

Convincing Proof

Convincing proof is given by these figures of the important part played by gas and gas appliances in the everyday life of the American gas consuming public. Not only are millions of gas appliances in use giving safe and satisfactory service, but their number is rapidly increasing. As a result of the development and application of the American Gas Association Approval Programme more than 95% of domestic gas appliances recently installed represent approved models. Such models are those which have been found by test to comply with rigid safety standards. They are identified by display of the Laboratories Approval Seal. Customers employing such approved appliances are assured of their safe and satisfactory performance under all conditions which may normally be encountered in service. Buyers and sellers alike for many years have placed increasing insistence on approved models.

Many features are responsible for the enviable position which gas appliances now occupy. As early as 1903 it was realised by leading authorities in the gas industry that the public deserved protection against domestic gas appliances which were poorly designed, inefficient, and in some cases actually unsafe for domestic use. Some specifications for appliance construction and performance were originated and enforced by large utilities which had adequate laboratory and engineering facilities, but as a whole the industry could offer no protection to the consumer on a national basis. The trend toward nationalisation of an appliance certification programme obtained its first firm foothold in 1915, when the initial attempt at writing a Gas Safety Code was undertaken. This work was interrupted by the first world war. Resumption of efforts toward codifying safety rules continued after the war. It was realised, however, that formulation of a safety code would, in itself, not solve the problem of consumer protection. It became apparent that a disinterested agency set up to determine and continuously to verify conformance of appliances with the safety code was indispensable. The gas industry, through the American Gas Association, undertook to set up such an agency for testing, inspecting, and labelling gas appliances in accordance with standards developed on a national basis. Although the gas industry had the full co-operation of governmental organisations such as the Bureau of Standards and the Bureau of Mines in formulating standards, supervision of the programme in its entirety was carried out by the gas industry.

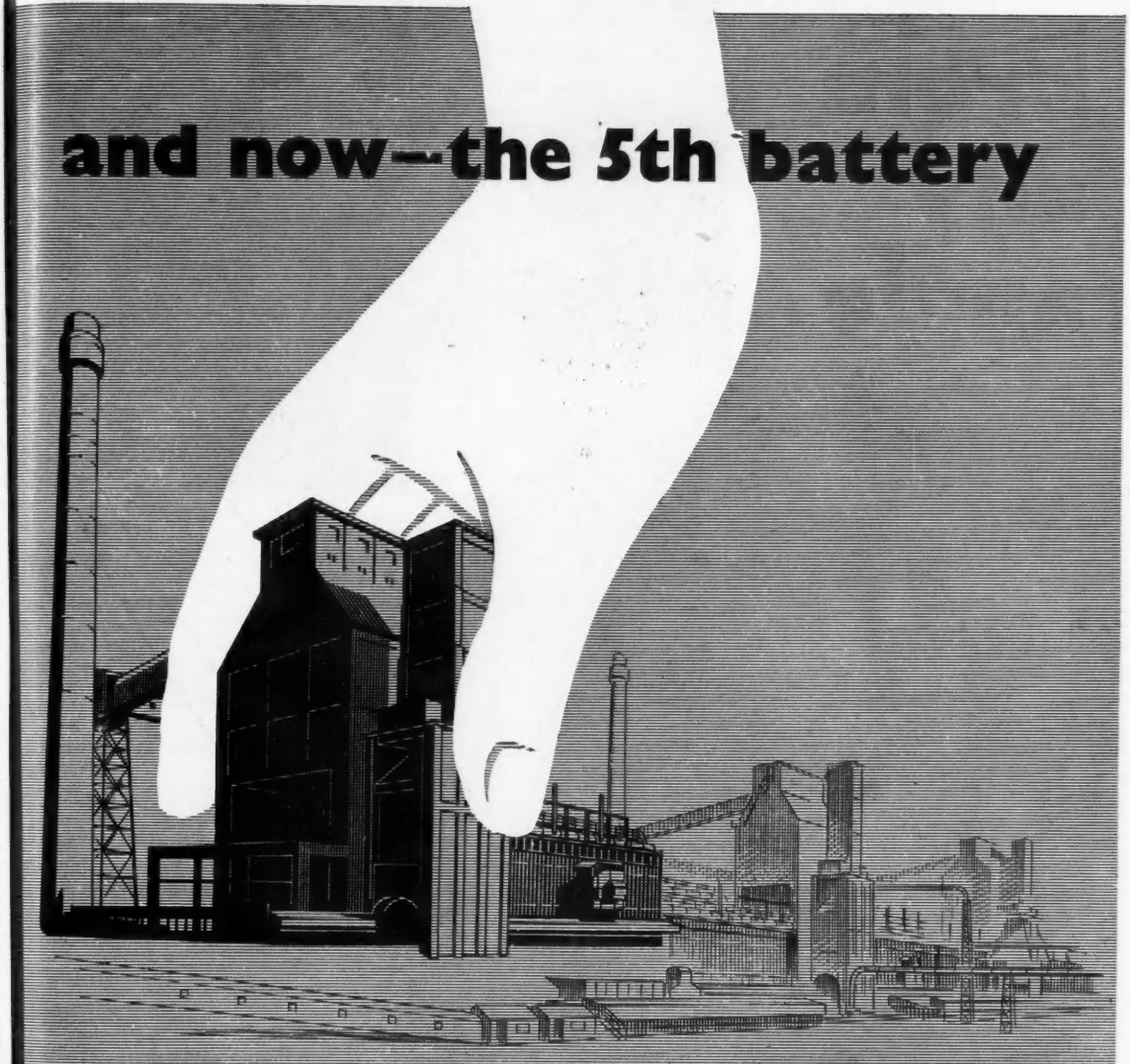
Growth of A.G.A. Laboratories

The American Gas Association Laboratories were established in 1925. Cleveland, Ohio, was selected as the best location principally because of its central position relative to the appliance manufacturers of the country. These laboratories provided for the first time an impartial central agency of national scope for administering the newly launched Approval Programme for the benefit of the gas industry and the public. In so doing two primary and interrelated functions were performed. One was to take the initiative in formulating and adopting national appliance standards or requirements as they are commonly known. The other, which was of more direct and immediate importance to the industry, was to apply these requirements in the testing of currently manufactured appliances. Those found to comply with these requirements would be granted approval. Evidence of approval would be provided by the required display of a distinctive emblem by each approved model.

The soundness of the original planning which preceded the establishment of the laboratories and the need for the broad activities assigned them is reflected by their rapid growth. Their original staff of four engineers housed in rented quarters in Cleveland has now increased to one of 135, composed of engineers experienced in gas and gas appliance technology, and the necessary clerical, maintenance, and service personnel, operating in well-equipped Cleveland and Los Angeles laboratories. The original Cleveland laboratory served the entire United States and Canada. Under an affiliation agreement with the Canadian Gas Association, the laboratories have since 1927 served as the official testing and approval agency for that Association. The first expansion of facilities became necessary in 1928, only three years after the organisation was founded, when a modern two-storey structure especially built for gas appliance testing and research was provided. Although a

(*Continued on p. 311*)

and now—the 5th battery



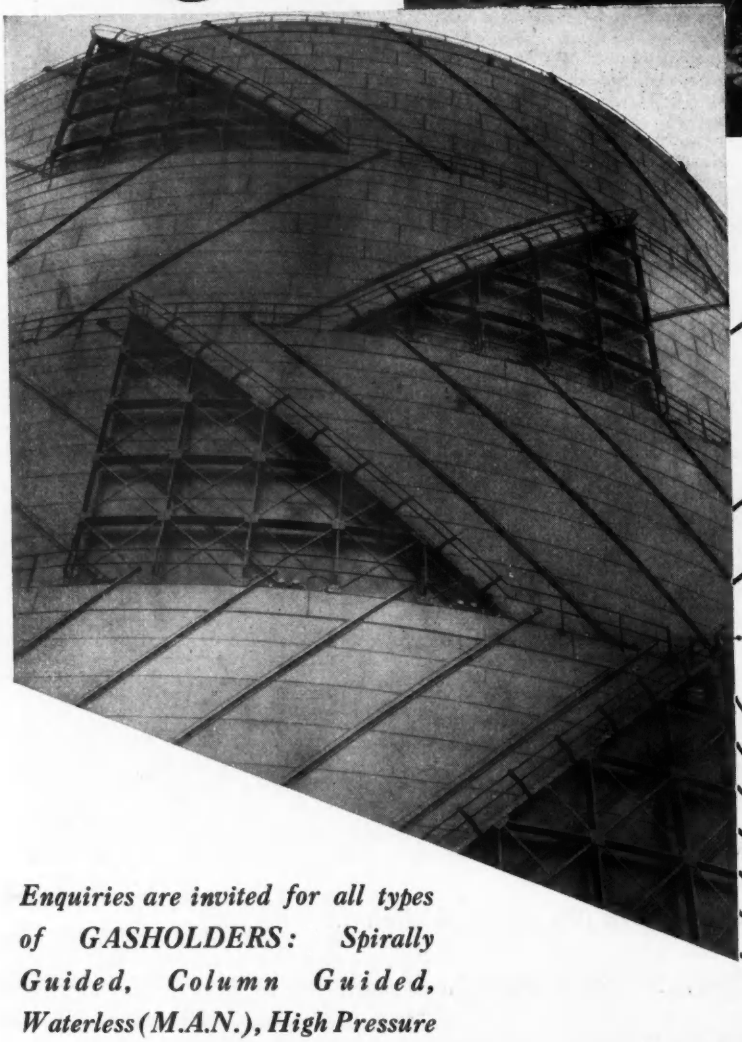
by Woodall-Duckham

The North Thames Gas Board have just ordered their fifth battery of W-D Koppers Coke Ovens for their Beckton Station.

These five batteries will have a total coal carbonising capacity of 3,000 tons per day.

THE WOODALL-DUCKHAM
VERTICAL RETORT & OVEN CONSTRUCTION CO. (1920) LTD.
Woodall-Duckham House, 63-77 Brompton Road, London, S.W.3
Telegrams : Retortical (Southkens) London. *Telephone : KENsington 6355 (10 lines)*

From any angle..



. . . and through
every stage of c
struction, is evid
the characteristic
sound design a
workmanship wh
stamps every G
holder installed
Dempster of Ella

Enquiries are invited for all types of GASHOLDERS: Spirally Guided, Column Guided, Waterless (M.A.N.), High Pressure

DE
DEMPSTER • ELLAND

ROBERT DEMPSTER & SONS LTD
ELLAND, YORKSHIRE.

LONDON OFFICE . . . . 57 TUFTON STREET S.W.1.

greatly enlarged laboratory was then available to the national gas industry, in 1931 it was found necessary to lease quarters in Los Angeles to provide facilities for testing gas appliances of Western manufacture. In 1940, the Pacific Coast Branch Laboratories were further expanded and housed in a new modern building. Further expansion at Cleveland in 1946, to include special quarters for the Research group followed by a doubling of the size of the Cleveland laboratories in 1951 and provision of an additional large building for use of the Los Angeles Laboratories in 1948, illustrate the rapid increase of facilities necessary to keep up with the development of the gas industry.

As no national requirements were originally available to serve as a basis for the testing of equipment, the first task confronting the laboratories was their preparation. Until such requirements were available obviously the testing of appliances was not practical. The responsibility of supervising the programme of preparation and adoption of requirements was delegated to a group known as the Approval Requirements Committee. Its membership consists of representatives of gas utility companies and manufacturers who are closely in touch with the manufacture and use of gas consuming equipment. Other members include representatives of such well-known national and government organisations as American Home Economics Association, American Institute of Architects, Associated Factory Mutual Fire Insurance Companies, Federal Housing Administration, National Board of Fire Underwriters, National Bureau of Standards, U.S. Bureau of Human Nutrition and Home Economics, U.S. Bureau of Mines, U.S. Public Health Service, and others. This group supervises the activities of sub-committees, each charged with the responsibility for the preparation and periodical revision of requirements covering individual types of equipment. The Approval Requirements Committee has as chairman an outstanding utility executive. The Laboratories Director acts as secretary.

Background of Practical Use

In preparing the first sets of national requirements formulated after the establishment of the Laboratories, liberal use was made of local requirements already in use by individual gas companies. In many instances these had enjoyed long and successful use by the companies responsible for them. Full advantage was taken of the background of practical use which had been made of them and the first editions of national requirements contained many of their provisions. One of the principal features in their preparation, however, was the conduct of the necessary investigational work by the laboratories to determine levels of performance of which contemporary appliances were capable and to devise appropriate methods of test suitable for universal application. The Approval Requirements Committee and its sub-committees depended on the laboratories' findings for basic information along these lines for inclusion in final requirements. Conduct of the many investigational studies necessary, preparation of proposed requirements provisions and test methods for committee consideration, arrangements for meetings, provision of editorial and secretarial services and related details represent services which the laboratories have always furnished in the conduct of the industry's appliance standardisation programme.

At the present time the Approval Requirements Committee, in supervising the overall requirements programme, directs the activities of 24 sub-committees. It takes final action on all requirements and revisions prepared by these individual groups. Since 1930 the Approval Requirements Committee has also functioned as a Sectional Committee of the American Standards Association. All requirements approved by it are presented to American Standards Association, Inc., for final adoption. When such action is taken they become American Standard and are printed bearing this designation. As American Standard rather than industry requirements alone, their significance is materially enhanced.

The Approval Requirements Committee and its sub-committees are constantly engaged in the preparation of standards covering new types of gas equipment, as well as in reviewing and revising existing standards in line with consumer demands and the latest developments in industry. Revisions of this type are continuously in progress. It is estimated that a new and revised set of standards for each type of gas appliance and accessory is issued and approved as American Standard on the average of once every two years. More than 1¼ mill. dollars have been expended by the laboratories in investigational work and revision of standards alone, and manufacturers have spent many times this much in modifying appliances to conform with standards which are continually being strengthened. The progress made in elevating the standards with which appliances submitted for test must comply has been responsible in no small degree for the improvements embodied in contemporary approval equipment.

Appliance Testing

Laboratories appliance testing is conducted under standards which have been approved by the American Standards Association for some 30 classes or types of gas appliances and gas appliance accessories. These include all of the usual domestic types of appliances such as ranges, water heaters, central heating equipment, and room heaters; commercial types of equipment such as hotel and restaurant ranges, deep fat fryers, and portable bake ovens; and appliance accessories such as valves, regulators, thermostats, and so forth. No approval testing is performed except under these national standards. In general, the major emphasis in all of the standards under which testing is carried out is placed upon safety. Gas appliances must operate without causing excessive temperatures on adjacent woodwork or walls, must produce no incompletely burned combustion products, must not leak gas, and must be so constructed that in normal use no danger will exist of cutting hands on sharp exposed edges, or of contracting burns from control handles or other surfaces normally exposed to manual contact.

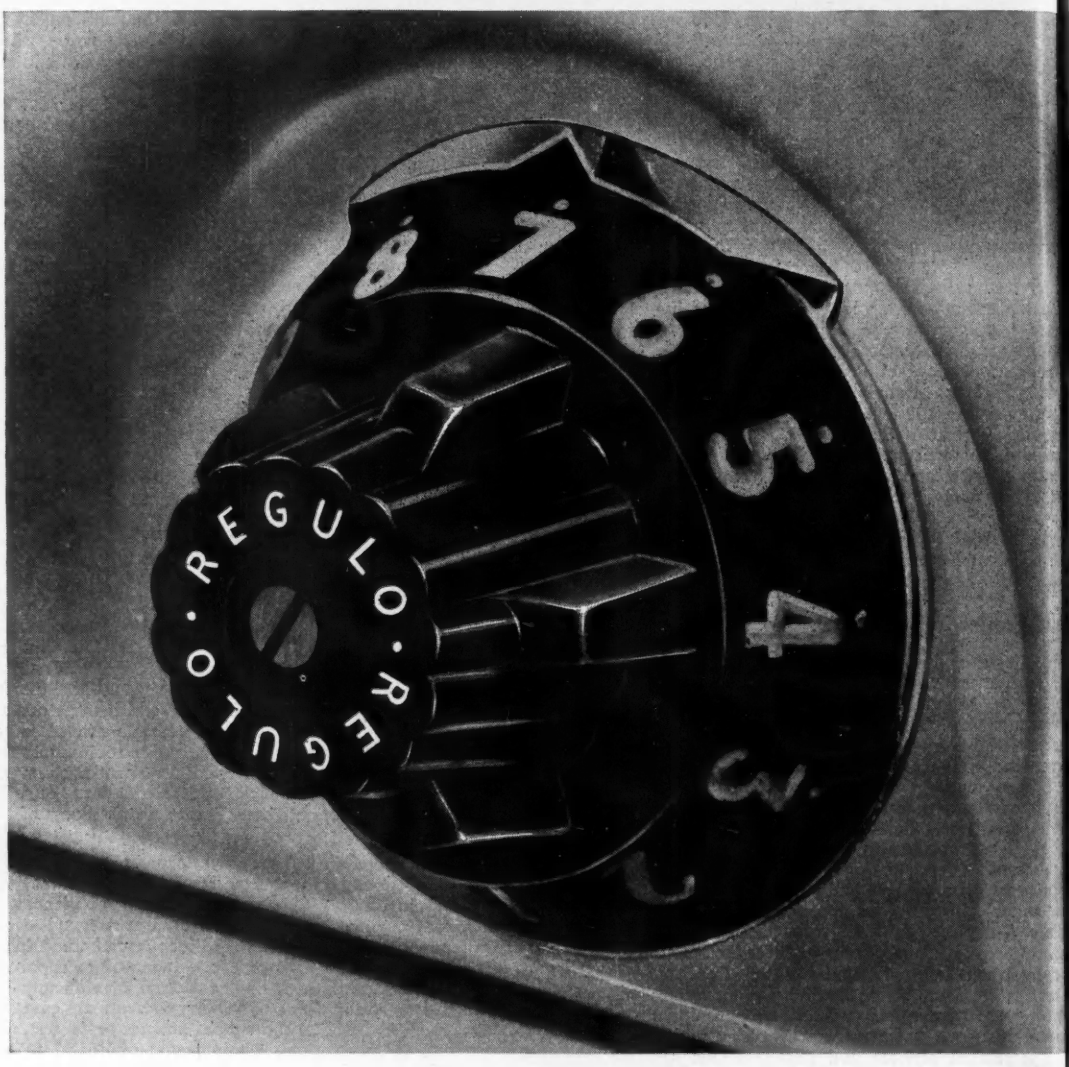
The factor of durability is thoroughly covered. An approved gas appliance is examined according to standards which require sufficiently sturdy construction to ensure that the appliance will continue to operate in accordance with standards throughout its service life. The appliance must also perform the function for which it is designed satisfactorily and it must operate at a reasonable efficiency. These requirements are of importance to the consumer, since he has a right to expect that his approved appliance will operate in a satisfactory manner. Tests in this category include determinations of efficiency, thermostat calibration, oven heat distribution, and many others.

As has previously been mentioned, the standards under which our testing is conducted are so developed that they are national in scope. This means that each appliance must be tested on a variety of gases, delivered at pressures which are representative of those which will be encountered in service. The laboratories are equipped with apparatus to supply at least five types of test gases, including natural, manufactured, mixed, liquefied petroleum, and liquefied petroleum-air gases. These gases can be supplied throughout the range of test pressures specified in the various requirements applied. Like other features of requirements, the composition and heating value of the test gases employed are continually being reviewed to ensure that they accurately represent gases in general use throughout the nation. In this connection mention may be made of a recent comprehensive investigation of the liquefied petroleum gas-air test gases to make sure that they were fully representative of all gases of their general type in use throughout the country. Reports from the field had shown a constantly increasing trend toward use of higher heating value mixtures. These reports were verified by the industry on investigation. As the result of the study made, appropriate changes in liquified petroleum-air test gases were adopted by interested committees and incorporated in revised requirements. They are now applied in the testing programme.

When an appliance has been found to meet applicable requirements, approval is granted by the laboratories. The manufacturer is provided with an embossed certificate as

(*Continued on p. 315*)

Only NEW WORLD gas app



The introduction of the REGULO on the first NEW WORLD cooker in 1923 opened a new era by removing all the guesswork from cooking in the oven.

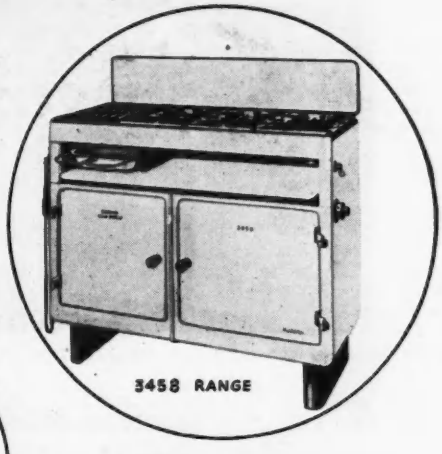
In recent years its use has been extended to provide NEW WORLD storage water heaters with a completely reliable automatic heat control.

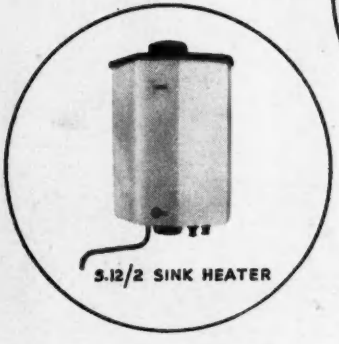
To-day, there are well over two million REGULO in constant use — a fitting tribute to the excellence of this ingenious device.

Radiation Group Sales Ltd., Head Office and Showrooms:—7, Stratford Place, London, W.1 Tel. MAYfair 6462

NEW WORLD NEW WORLD NEW WO

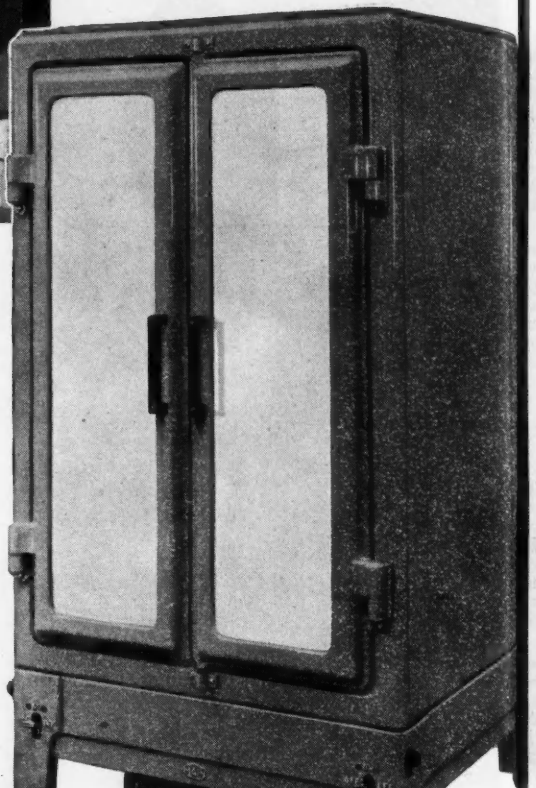
...nces have REGULO control





NEW WORLD NEW WORLD NEW WORLD

In well-designed kitchens...



This Large Type **MAIN GAS ROASTING OVEN** is constructed generally of cast-iron and finished externally in Dapple Vitreous Enamel with white enamelled door panels, bakelite door handles and chromium-plated mountings.

The oven interior is 30″ wide x 30″ deep x 48″ high. It has enamelled steel linings and is fitted with three grid shelves carried on removable side hangers. The heating is by two atmospheric gas burners.

The oven is mounted on enamelled cast-iron feet. The storage pan under the oven is of copper construction with an enamelled cast-iron front.

If you have any catering problem, large or small, write to R. & A. Main Ltd. They offer you the benefit of their long experience in the equipping of Kitchens, Canteens, etc. Layouts and estimates prepared on request.

MAIN

COOKING APPARATUS AND KITCHEN EQUIPMENT

Gas and Steam

R. & A. MAIN LIMITED

Gothic Works, Edmonton, London, N.18 and Gothic Works, Falkirk

evidence of this approval. This certificate and the approval which it represents remain in effect for the balance of the calendar year. Renewal may be granted following a satisfactory inspection of current production at the premises of the manufacturer. The procedure followed will be discussed later when appliance inspection details are considered.

Official marking of approved gas appliances is provided by a certification mark known as the Laboratories Approved Seal. This mark is registered and is the property of the American Gas Association, which exercises the sole control over its use. Display of the registered Approval Seal is permitted only on those appliances which have been certified as complying with applicable national standards. The manufacturer of the appliances displaying the Approved Seal must comply with all regulations governing its use.

Appearance of the Laboratories Approved Seal on an approved gas appliance constitutes the manufacturer's certification to the laboratories and to the public that the particular unit bearing it conforms in all respects to the model to which approval was originally granted. Presence of this Seal provides the gas consuming public with a ready means of identifying appliances meeting national standards. Such a means of identification is of the greatest value to purchasers of equipment as it assures them that the appliance bearing the Approval Seal represents an approved model and safe operation, substantial and durable construction, and acceptable performance.

Appliance Inspection

Early in the development of the approval programme it was realised that the testing and approval of an appliance alone would not accomplish the full objective desired. It was found necessary to supplement the testing programme by a systematic plan of inspection of approved equipment at the premises of the respective appliance manufacturers. An inspection programme of this nature was, therefore, inaugurated soon after the laboratories were established. Under this system an annual inspection visit is made to each factory, where approved appliances are produced, and current production of approved models carefully checked. These annual inspection visits are customarily made during the fall and early winter months in order that approval may be renewed for the following year. At least one and frequently more unannounced inspections are made at other times during the year in order to maintain a constant check on the manufacturer's production.

If the annual inspection discloses that the construction of the models currently being fabricated are in exact conformity with that of the ones formerly examined, approval is extended for the ensuing calendar year and a new Certificate of Approval given the manufacturer. In the event of changes in construction being encountered on any inspection, it is frequently necessary for the models displaying them to be re-submitted for further tests in order that the acceptability may be determined. In other instances, corrections may be required so that the appliance will be constructed in the original manner. In that event, additional visits are made to make certain that the corrections are properly cared for. In rare instances where the constructional discrepancies are of a serious nature which will interfere with the proper functioning of the appliance, approval is withdrawn until satisfactory corrections are made. It is to the credit of the manufacturers that instances of this sort are very infrequent.

Every effort is made to protect the Laboratories Approval Seal from misuse, or its display by appliances which are not qualified to bear it. In such instances, prompt steps are taken to correct the condition. For a number of years past the Laboratories Approval Seal has been registered and legal protection is thus available against any misuse of this symbol. Instances of such misuse are extremely rare.

Approval may be renewed by annual factory inspection up to a maximum of five years. For further renewal after that time, re-testing and compliance with the latest requirements in effect is necessary. It is customary to revise requirements and add new or revised provisions about every two years. This necessitates the conduct of additional tests in order to determine that the appliance may be again approved. This policy was placed in effect in 1935. Its enforcement over the intervening years has resulted in a material elevation in the quality of approved equipment and the level of performance of which it is capable.

Directory of Approved Equipment

One of the most widely known gas industry publications is the Directory of Approved Gas Appliances and Listed Accessories. This provides complete, up-to-date information on all equipment certified by the laboratories. All products shown are arranged according to type under the names of their respective manufacturers. Separate approvals are shown for manufactured, natural, and mixed gases, for liquefied petroleum gases, and for liquefied petroleum-air gases. Any particular model, together with the gas for which it is approved, can thus be readily located.

The Directory is arranged in two parts. The first contains products certified for the companies actually manufacturing them. The second shows equipment certified for distributors, jobbers, or dealers. Each is provided with a complete index of the organisations listed, as well as one giving various trade names.

The Directory is published by the Laboratories in complete form in the months of January and July. Each of these issues includes a complete list of all equipment certified as at the first of the month in which it is published. Supplements are issued for the remaining months, each giving the equipment certified during the preceding 30 days.

The Directory enjoys a wide circulation among utility companies, manufacturers, government agencies, mail order houses, department stores, and other organisations interested in the purchase and sale of gas consuming equipment and provides an up-to-date authoritative record of certified equipment. It is widely consulted for reference purposes. It is of great assistance not only to those purchasing and selling gas appliances but to municipal and other authorities enforcing ordinance provisions which require appliances to comply with national requirements in order to be eligible for installation.

Conclusion

The principal activities of the Laboratories in the administration of the approval programme for the 25-year period ending in 1950 may be summarised by the following:

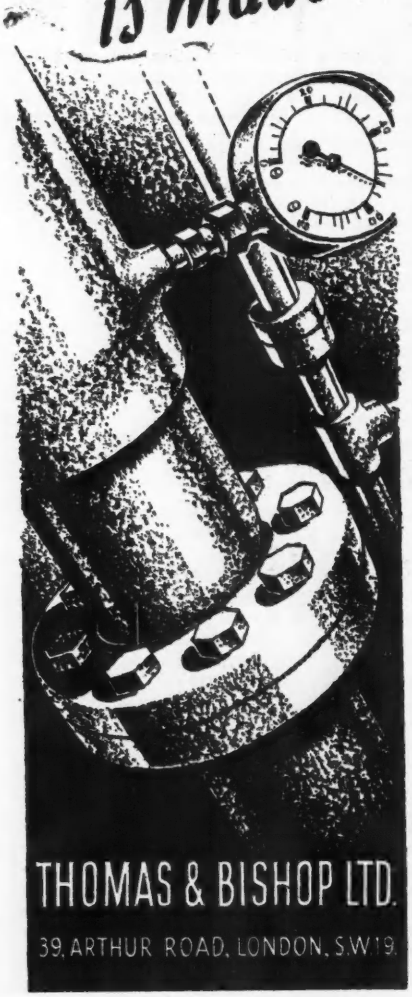
Number of appliances tested	28,883
Number of inspections	25,776
Number of Requirements Committee meetings ...	562
Number of reports and investigations	750
Number of Standards developed	37

The success which the approval programme has attained affords convincing evidence of the soundness of the objectives which it was originally designed to accomplish. Not only has it been of immeasurable benefit to the gas industry and the ultimate gas consumers but it has also been of the greatest assistance to government agencies both national and local. Full advantage has been taken by such agencies of the availability of equipment complying with national safety standards as evidenced by display of the Laboratories Approval Seal. Agencies of the Federal Government universally insist on such appliances for purchase and installation in situations under their control. A large number of municipalities throughout the country have for many years been enforcing ordinances permitting only the installation of appliances meeting national safety standards. In this way the quality of equipment installed in such territories has been maintained. The approval programme originally inaugurated by the gas industry in the interest of self-regulation may now be said to have accomplished the purposes for which it was established. From Florida to British Columbia, from Maine to California, an approved gas appliance properly installed and operated may be expected to give years of trouble-free service.

Permac
METAL-TO-METAL JOINTING MATERIAL

Ever since 1913 "PERMAC," the original Metal-to-Metal Jointing, has been holding up difficult joints in Gas Works and on Coke Oven Plants all over the world. Equally suitable for any joint—steam, water, gas, oil, benzol, ammonia, etc.—screw pipe or flange.

Instant full pressure when the joint is made



THOMAS & BISHOP LTD.
39, ARTHUR ROAD, LONDON, S.W.19.

PUBLICATIONS RECEIVED

The ninth edition of the *Power Transmission Directory and Trade Names Index*, dated 1952-54, has been published by Trade and Technical Press, Ltd., 65-66, Chancery Lane, W.C.2. The directory, the only one of its kind compiled specially for power users requiring mechanical power transmission equipment, was first published in 1933. The ninth edition has been completely revised and re-set and many new entries have been added. The trade names index now carries over 1,800 trade or brand names, listed alphabetically. In addition there are classified, alphabetical and geographical sections showing names of manufacturers and suppliers and complete lists of power transmission equipment arranged for quick and easy reference.

• • •

We have received from W. H. Heywood & Co., Ltd., a copy of the first catalogue which the firm has published since the war. This comprehensive book shows the full range of operation of the Heywood organisation, which has been prominent in the patent roof glazing industry for more than 60 years. During and immediately after the war there were great difficulties in producing a complete catalogue of this nature, and for some years thereafter the firm was developing a new field of thermal insulation.

A feature of this handsomely bound and lavishly produced catalogue, in its convenient format, is that the numerous illustrations are set facing the relevant technical data and diagrammatic information about a particular installation illustrated. For further convenience the pages are in loose leaf form and full technical data, concerning not only work and undertakings for which Heywood's are well known, but also the types of glass and other materials they use and recommend, are supplied. Examples of large-scale contracts which show patent glazing and thermal insulation are the B.E.A. power station at Dunstan-on-Tyne, with a glazing area of over 180,000 sq. ft., the ship building and engineering works of Harland & Wolff with a glazing area of over 250,000 sq. ft., and the public market at Reading.

This catalogue is produced for the information of, and is available free on application to architects, municipal, civil, structural, and works engineers, gas boards, public works and building contractors, and the librarians of technical information centres with readers interested in this type of work.

The firm has also available an illustrated leaflet which gives details about its undertakings. Those interested in patent glazing and the thermal insulation of buildings are invited to apply for a reference copy of the catalogue or the leaflet to W. H. Heywood & Co., Ltd., Bayhall Works, Huddersfield.

Braille Centenary

EXHIBITIONS are being held throughout the country to commemorate the centenary of the death of the inventor of the six little dots which make up the Braille alphabet—Louis Braille. At the exhibition at Long Ditton Hall, Ewell Road, Long Ditton, Surrey, which opened yesterday and continues until next Saturday, the West Surrey Division of the South Eastern Gas Board is displaying an 1840 New World cooker fitted with a Braille Regulo, and a cooking chart in Braille.

Braille Regulo and cooking charts are available for the New World 4180 cooker and 1430 series of cookers, as well as the older Series 1 and 2 cookers, and an abridged version of the Radiation Cookery Book in Braille is published by the National Institute of the Blind.

Television Gas Cooker

TELEVISION viewers will be interested in the glass gas oven which will be used for the first time on television by Philip Harben in his cookery feature at 8.35 p.m. on Friday, August 8. The oven, mounted on a stand at camera height, has been specially designed and made by Radiation Ltd., and is fitted with Regulo control so that normal settings and cooking times apply.

A set of detachable panels is provided and any combination of these can be affixed to provide suitable background for any viewing position. The inside finish of the side and back panels is matt grey and glossy cream on the top. Except in the case of the oven base the glass walls of the oven are double panelled and if it should be desirable to clean the *inner surfaces* of the panels the outer panel can be removed for this purpose.

The grid shelf supports are detachable so that only those required for any particular cooking operation need be in position at the time.

Alder & Mackay to Join United Gas Industries

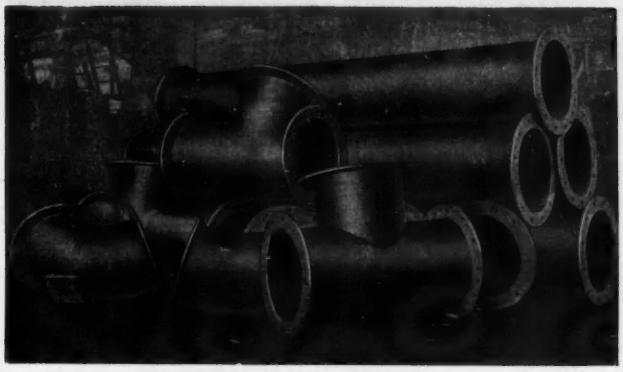
THE Directors of United Gas Industries, Ltd., announced on August 2 that they had entered into a provisional agreement, subject to approval by the shareholders of each Company, with the Directors of Alder & Mackay, Ltd., for the amalgamation of the Companies.

It is proposed to allot three 7% cumulative preference shares of £1 in United Gas in respect of each four 5% preference shares in Alder & Mackay and one ordinary share of £1, together with a cash payment of 23s. 9d. for each ordinary share in Alder & Mackay.

The implementation of these proposals is conditional (*inter alia*) upon ratification of the offer by not less than 90% in nominal value of both issued preference and ordinary shares in Alder & Mackay, or such lesser percentages as United Gas may agree to accept.

The Directors of each Company have issued to shareholders a recommendation of acceptance of the offer.

Colonel W. C. Smith, Chairman of United Gas, will join the Board of Alder & Mackay, while the Chairman of that Company, Mr. H. E. Bennet, will join the Board of United Gas.



C. & W. WALKER

LTD.

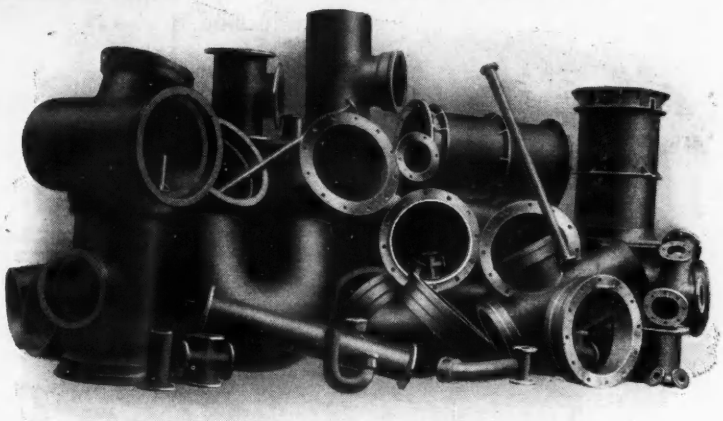
DONNINGTON, Nr. WELLINGTON—SHROPSHIRE

'Phone : 12, WELLINGTON—SHROPSHIRE.
'Grams : "FORTRESS" DONNINGTON—SHROPSHIRE

LONDON OFFICE :
70, VICTORIA STREET, S.W.1
'Phone : 5842 LONDON—VICTORIA
'Grams : "FORTRESS" SOWEST, LONDON

ELECTRICALLY-WELDED
STEEL PIPES
AND
SPECIALS

CAST IRON
PIPES
AND
SPECIALS



ESCOL

THE SYMBOL OF SERVICE AND QUALITY

Vitreous Enamels
Vitreous Enamelling
Refractory Coatings on Metals

Telephone:
MITcham 1634 (5 lines).

Telegrams:
Escol, Toot, London.

STEWART & GRAY LTD.

Paisley Works, Swains Road,
Tooting Junction, S.W.17.

J. BROWN & CO. LTD.
SAVILE TOWN, DEWSBURY, YORKS.
Supply:–
"BROWNOX-de-LUXE" PURIFYING MATERIAL
Purchase:–
SPENT OXIDE

EWART CHAINBELT CO., LTD.
DERBY, ENGLAND
Driving and Conveyor Chains of the best quality; made of Ley's Celebrated Blackheart Malleable Iron.
ALSO COMPLETE CONVEYORS AND ELEVATORS

WRIGHT'S BOYS' CALORIMETERS
are made to official specification and to WRIGHT'S conception of quality production.
ALEXANDER WRIGHT & CO., LTD.
WESTMINSTER, S.W.1

COKE SACKS!
HEMP AND JUTE, KEENEST PRICES
H. R. WEBSTER, LTD.,
SALMON LANE WHARF,
LIMEHOUSE, LONDON, E.14.
ESTABLISHED OVER 150 YEARS.
Telephone: STEpney Green, 4458/9.

COAL AND COKE SCREENING & SIZING PLANTS.
RETORT SETTINGS PRODUCERS, FURNACES REPAIRS.
GOODALL, CLAYTON & Co. LTD.
LEEDS.
CONVEYORS, ELEVATORS, BUNKERS, ROOFS, HOISTS, Etc.

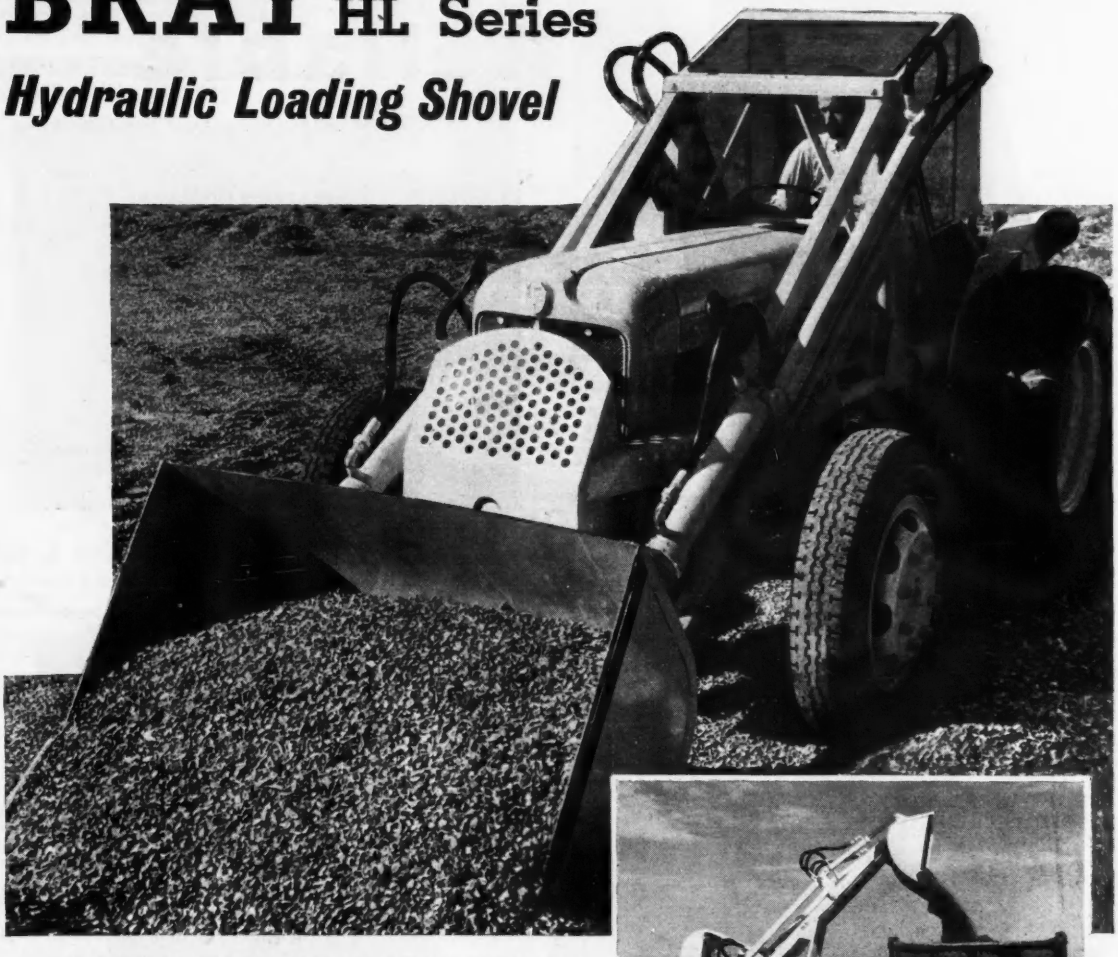
UNDERPRESSURE ENGINEERING CO., LTD.
UNION FOUNDRY, MANSFIELD, NOTTS.
ALL TYPES OF DISTRIBUTION MATERIAL IN STOCK
UNDERPRESSURE CONNECTIONS
SPLIT COLLARS
SOCKET CLIPS
CENTRAL ACTION DRILL STANDS
SERVICE CLEANSERS
TOOLS, ETC.
Service Enquiries:
STAFFORD HOUSE, NORFOLK STREET, STRAND, W.C.2.
'Phone: MANSFIELD 1256. *'Grams:* CASTINGS, MANSFIELD.
'Phone: TEMPLE BAR 9910. *'Grams:* WASHER, ESTRAND, LONDON

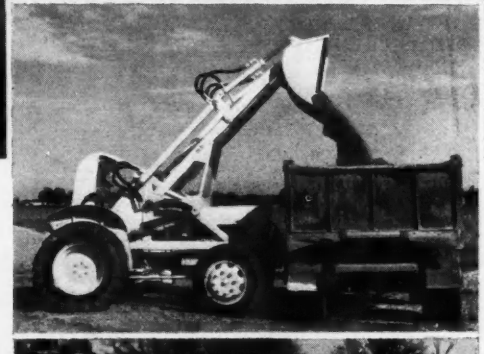
WESTWOOD & WRIGHTS
LIMITED
BRIERLEY HILL, STAFFS.
GASHOLDERS · PURIFIERS · WASHERS
CONDENSERS · CASTINGS · STEELWORK
GAS VALVES · WELDED PIPES

A Revolutionary Development-

BRAY HL Series

Hydraulic Loading Shovel





EXCLUSIVE FEATURES INCORPORATED IN THE NEW HL SERIES BRAY HYDRAULIC LOADING SHOVELS.

1. **Hydraulic Power Crowd** on bucket ensures a positively full bucket in all materials and aids penetration.
2. **Exceptional Stability** is achieved by power crowd of the bucket enabling a full load to be carried near to ground level.
3. **Bucket control by hydraulic operation** ensures clean and swift or controlled discharge. Bucket reset hydraulically.
4. **Positive bucket control** permits surface stripping without modification or additional attachments.
5. **Variable bucket digging angle** enables operator to improve loading effort under adverse conditions.

Cutting edge and wearing plates in one piece giving support to bucket corners.
Leading edge of bucket protected by stepped cutting edge.
Front mounted pump providing *constant* hydraulic power.
Hydraulic control valve for instantaneous operation. Single lever. Finger-tip control.
Large capacity jacks with ground and hard chromed piston rods. Main frame of welded steel folded sections. Pivot points with renewable bronze bushes.
Petrol, kerosene or diesel engines.
All controls are arranged in position to that of a motor car.
Attachments: Dozer Blade, Rock Fork, Fork Lift, Crane, Snow Plough.

AVAILABLE IN ¾, 1 AND 1¼ CU. YD. CAPACITIES.

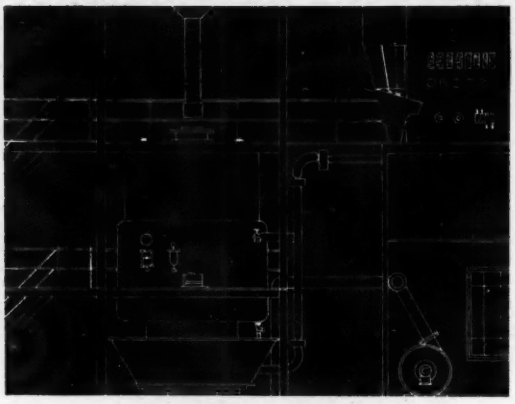
LOOK TO BRAY FOR NEW DEVELOPMENTS — CONTINUED LEADERSHIP . . .

BRAY REGD.

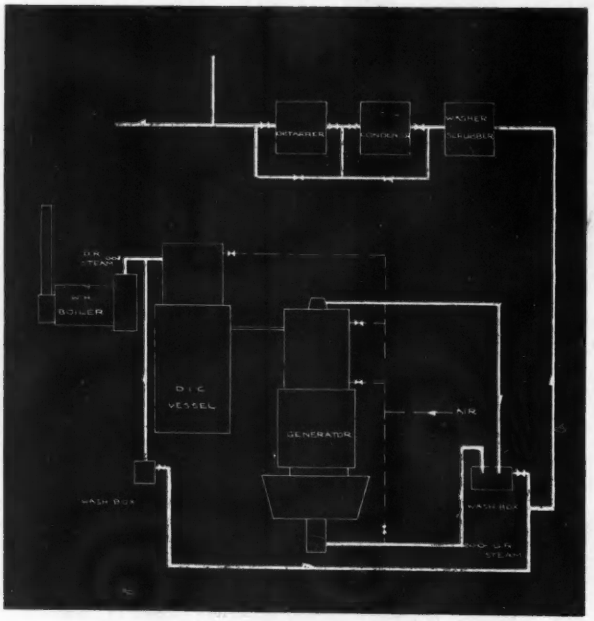
W·E·BRAY & CO·LTD· FELTHAM · MIDDLESEX · 'PHONE FELTHAM 3471-4

Efficient and Reliable

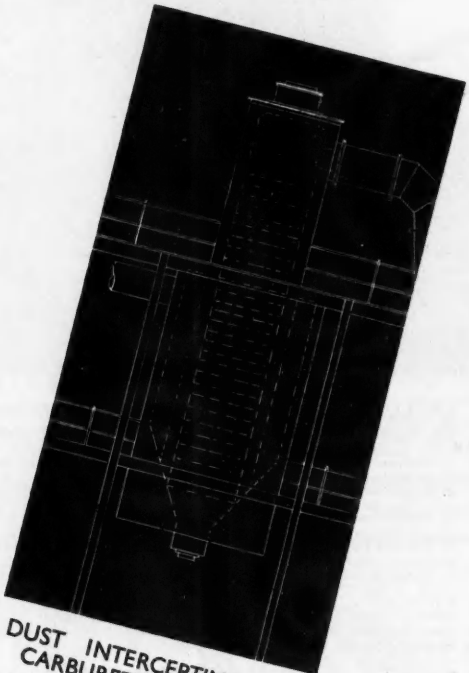
COMPLETE GASIFICATION



CARBURETTED WATER GAS



FLOW DIAGRAM



DUST INTERCEPTING AND CARBURETTING VESSEL

TULLY SONS & CO. LTD.

NEWARK - - - NOTTINGHAMSHIRE

Telephone : NEWARK 258 - Telegrams : TULLCARBO, NEWARK

OXIDE

DUTCH AND DANISH BOG ORE
SPECIALLY ACTIVATED OXIDE OF IRON

Oxide supplied on loan or sale outright.
Highest prices paid for Spent Oxide.

Send your enquiries to

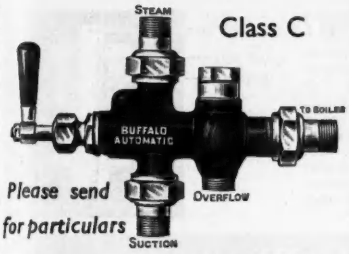
GAS PURIFICATION & CHEMICAL COMPANY LIMITED

ESTABLISHED 1873

PALMERSTON HOUSE, OLD BROAD STREET, LONDON, E.C.2.

Telegrams: "Purification, Stock, London." Telephone: London Wall 5077

BUFFALO INJECTORS



Class C

Please send for particulars

GREEN & BOULDING, Ltd.
162a Dalston Lane, London, E.8

MISCELLANEOUS

SMALL single truckloads and larger quantities of good ROUGH BREEZE from any gasworks, large or small, in the United Kingdom required by merchants paying own railway tolls. Cash price and particulars to No. 9378, *Gas Journal*, 11, Bolt Court, Fleet Street, London, E.C.4.

"KLEENOFF" *
THE COOKER CLEANER

"KLEENOFF"
FIBRE BRUSHES
RUBBER MOPS

KETTLE DESCALER *
(NEW "KLEENOFF" PRODUCT)

For resale to the public, and in bulk for Works use

BALE & CHURCH, LTD.
7, CROMPTON WAY, CRAWLEY, SUSSEX.

FIRE!
WHERE'S YOUR
NU-SWIFT?
The World's Fastest Fire Extinguishers
—for every Fire Risk
Pressure-operated by sealed CO_2 Charges
NU-SWIFT LTD · ELLAND · YORKS
In Every Ship of the Royal Navy

SPECIALISED LUBRICATION

Microtime Oils and **Greases** for Clocks, Meters, Fine Instruments and all Delicate Mechanisms. These oils possess extraordinary stability under extreme temperature conditions, do not spread, and give perfect lubrication over very long periods

also

Microloid Dry Lubricant—a quick-drying suspension of colloidal graphite in a non-inflammable carrier.

Descriptive literature on request from

BRITISH INDUSTRIAL PRODUCTS
SELWYN HOUSE, LONDON, W.C.1 TERminus 6526

PATENTS

KINGS PATENT AGENCY, LTD.
(Director. B. T. King, A.I.M.E., Patent Agent). Advice, Handbook, and Consultations free. 146a, Queen Victoria Street, London, E.C.4. 'Phone: City 6161.

PLANT WANTED

WANTED:—REGULAR SCRAP GAS METERS AND PARTS. Best prices paid. Offers to:—Mitcham Smelters Ltd., Red House Road, Croydon, Surrey. *Tel.*: THOrnton Heath 6101 (Private Branch Exchange).

PLANT FOR SALE

VICKERS Spearing Water Tube Boiler for sale. (similar to Babcock & Wilcox C.T.M.) Evap. 60,000 lb. hr. at 365 lb. sq. in. W.P. with Superheater giving 650°F. final steam temp. Steel cased with Economiser, Fittings and Chimney. Specially examined by Insurance Co. Available immediate delivery.—George Cohen, Sons & Co., Ltd., Wood Lane, London, W.12. *Tel.*: Shepherds Bush 2070 and Stanningley, nr. Leeds. *Tel.*: Pudsey 2241.

APPOINTMENTS VACANT

The engagement of persons answering these advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she, or the employment, is excepted from the provisions of the Notification of Vacancies Order, 1952.

NORTH WESTERN GAS BOARD

MANCHESTER GROUP
CARBONISING SUPERINTENDENT—
STRETFORD WORKS

APPLICATIONS are invited for the above position at a salary within Grade A.P.T. 10 (£645-£745 per annum).

Applicants should possess a Higher Grade Certificate (Gas Engineering—Manufacture) of the Institution of Gas Engineers or its equivalent, and have had wide experience in the control of horizontal retort plant.

The successful applicant may be required to pass a medical examination and to subscribe to such superannuation scheme as the Board may adopt.

Detailed applications, giving the names of two referees, should reach the General Manager, North Western Gas Board (Manchester Group), Town Hall, Manchester, 2, within twelve days.

NORTH WESTERN GAS BOARD

BURNLEY-COLNE GROUP
TECHNICAL ASSISTANT—DISTRIBUTING

APPLICATIONS are invited for the above position at a salary within Grade A.P.T. VI (£475-£555 per annum).

The successful applicant will be required to assist the Group Distributing Engineer in all aspects of distributing work in the Group. He may be required to pass a medical examination and to subscribe to such superannuation scheme as the Board may adopt.

Detailed applications, giving the names of two referees, should reach the General Manager, North Western Gas Board (Burnley-Colne Group), Parker Lane, Burnley, within fourteen days.

NORTH EASTERN GAS BOARD

YORK-HARROGATE GROUP
SCARBOROUGH DISTRICT
DISTRIBUTION SUPERINTENDENT 'B'

APPLICATIONS are invited for the above position at a salary within Grade X (A.P.T.) £645-£745 per annum of the salary scales agreed by the National Joint Council for Gas Staffs.

Applicants, preferably holding the Higher Grade Certificate (Supply) of the Institution of Gas Engineers, must be experienced in the organising and controlling of a modern Distribution Department, and will be responsible for the successful operation of all its sections, which include Fittings, Mains and Services and Public Street Lighting.

The successful applicant will be required to pass a medical examination, and to subscribe to such superannuation scheme as the Board may adopt.

Applications, stating age, education, experience and qualifications, should be forwarded to the Group General Manager, North Eastern Gas Board, York-Harrogate Group, 48, James Street, Harrogate, not later than fourteen days after the appearance of this notice.

J. C. GARDNER,
Secretary.

Bridge Street,
Leeds, 2.
July 28, 1952.

WEST MIDLANDS GAS BOARD

TECHNICAL ASSISTANT TO
DIVISIONAL ENGINEER—
BIRMINGHAM DIVISION

APPLICATIONS are invited from suitably qualified persons for the post of personal Technical Assistant to the Divisional Engineer, which offers experience over a wide field of technical and administrative work.

Candidates must be corporate members of the Institution of Gas Engineers, and possess either an Engineering Degree or a Gas Engineering Diplo ma Previous experience in a responsible position on a large gas works would be an advantage.

The commencing salary will be £1,000 per annum, rising, subject to approved service, to £1,185 per annum.

The post is superannuable, and the successful candidate may be required to undergo a medical examination.

Applications, stating age, training, qualifications and experience, together with the names of two referees, should be addressed to the Industrial Relations Officer, West Midlands Gas Board, 6, Augustus Road, Edgbaston, Birmingham, 15, to reach him within fifteen days of the appearance of this advertisement.

F. H. CURETON,
Secretary to the Board.

PORTSMOUTH, GOSPORT AND BOGNOR REGIS GAS UNDERTAKING

SOUTHERN GAS BOARD
CARBONISING SUPERINTENDENT

APPLICATIONS are invited for the position of CARBONISING SUPERINTENDENT in the Portsmouth Group of Undertakings.

The successful applicant will be in control of the carbonising plant at Hilsea Gas Works (capacity 12 million cu. ft. per day), and be responsible to the Works Superintendent, while he will also act in an advisory capacity to the Superintendents of the other Gas Works in the Group on matters of carbonising practice and plant repair. It is desirable that applicants should be corporate members of the Institution of Gas Engineers and preference will be given to candidates with detailed operating experience of Intermittent Vertical Chambers and Continuous Vertical Retorts using Durham coals.

The commencing salary will be within Scale A.P.T. II (£670 to £795 per annum for a Category 'A' Undertaking), while the successful candidate will be required to pass a medical examination and, if not a member of an existing Pension Scheme, to become subject to the provisions of any Superannuation Scheme which the Board may introduce.

A Board's house will become available in some twelve months' time at a reasonable rental.

Applications, stating age, qualification, present position and experience, together with the names of two referees, should be sent to the undersigned to reach him not later than Saturday, August 16, 1952.

H. M. LAWRENCE,
General Manager.

Portsmouth, Gosport & Bognor Regis
Gas Undertaking,
The Square,
Portsmouth,
Hants.

we serve to burn

"Fishtail" type burner *with two-armed stamped pattern injector for heating liquid in tanks by submerged horizontal combustion tubes. For use with low pressure gas supplies.*
Size Range: *1", 1¼", 1½", 2" and 2½" outlets.*
Capacity Range: *45-280 cu. ft. of gas per hour.*

Note.—These four burner heads are for high pressure gas or low pressure gas and air blast.

Brass non-blow-off head types: *deal with 5 to 10 cu. ft. of gas per hour.*

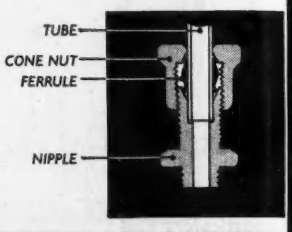
Stainless steel, "F" type head, burner: *deals with 8 cu. ft. of gas per hour.*

Perforated head type burner: *deals with 10 or 15 cu. ft. of gas per hour.*

Type 2 Mixture Controller, *for controlling quality of air/gas mixture irrespective of varying pressures and resistances. Temperature control is varied by manipulation of the air cock only.*
Capacity Range: *from 130 to 1380 cu. ft. of gas per hour according to air pressure (¼ lb. to 1 lb.) and size. For low pressure gas systems.*
Air Inlets: *1", 1¼", 1½" and 2" diameters gas thread.*

DID YOU KNOW?

KEITH BLACKMAN have been making compression joints for many years and the present design embodies features developed as a result of this long experience. Notice that the shape of the ferrule is such that the joint is made without unduly stressing the tube.

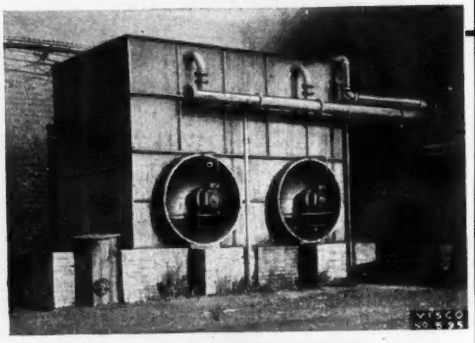


INDUSTRIAL GAS EQUIPMENT

Keith Blackman LIMITED
MILL MEAD ROAD, TOTTENHAM, LONDON, N.17
"Phone: Tottenham 4522 (twelve lines). "Grams: "Keithblac, Norphone, London."
BRANCH OFFICES: AT MANCHESTER, BIRMINGHAM, LEEDS, GLASGOW, NEWCASTLE-ON-TYNE, PENARTH near CARDIFF, AND BELFAST

510/1/GJ

The "Visco" Steelshell Water Cooler illustrated has made a welcome reduction in the water consumption at the factory in which it is installed. Now the water used for cooling passes through this unit not once, as was the case when Mains water was used, but over and over again. The saving in the cooling water bill is about 97%. We have a size to suit you. May we send you list No. 541?



"Visco" Steelshell Forcedraft Cooler, cap. 2,400 g.p.h. used with compressors in a cardboard container factory.

also makers of AIR FILTERS, Dust Collectors and Fume Removal Plant.

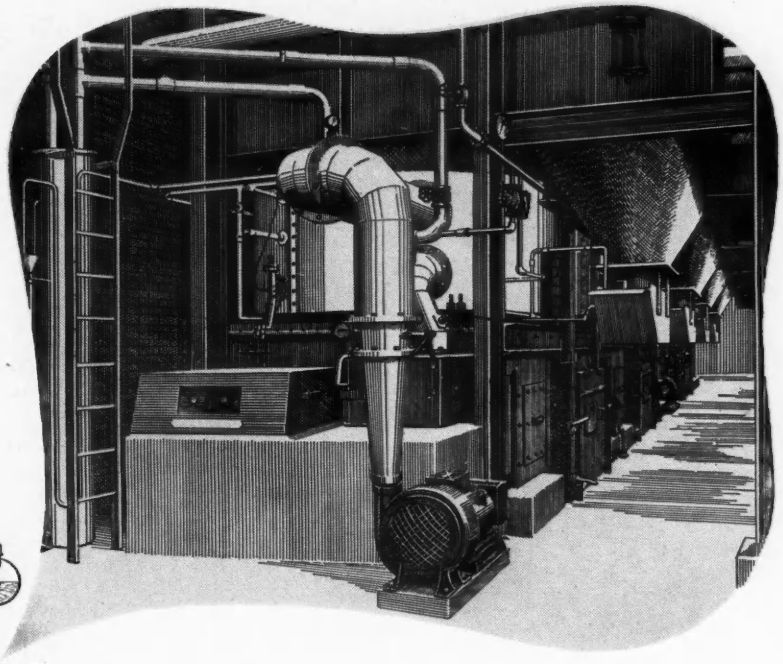
VISCO
STEELSHELL *Water Coolers*

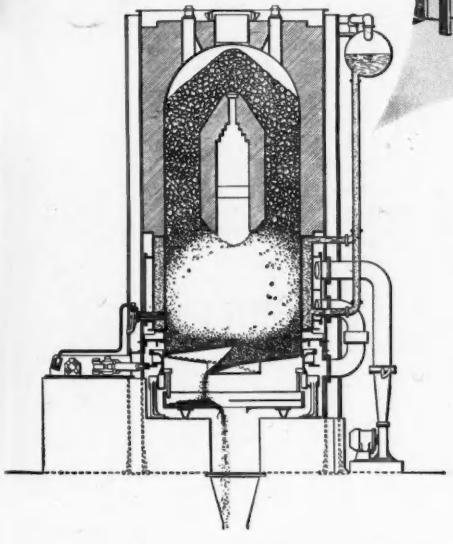
Telephones: CROydon 4181/4

VISCO ENGINEERING CO. LTD. STAFFORD RD. CROYDON

Printed by STRAKER BROTHERS LTD., E.C.2, for WALTER KING, LIMITED, 11, BOLT COURT, FLEET STREET, LONDON, E.C.4. Wednesday, August 6, 1952

less labour, less fuel –
and the GAS STAYS HOT





West's "Hot Gas" Mechanical Producer

does more than eliminate manual clinkering. It has a hot gas efficiency of 90% and shows a marked reduction in the combustible content of the ashes. That, in turn, means fuel economy.

Producer and dust extractor are enclosed in a heavily insulated steel casing. The gas offtake, situated centrally immediately over the flare bed, draws off gas at formation temperature and is completely insulated, so that full advantage is taken of the sensible heat conveyed DIRECT to the settings. Dust extraction efficiency is up to 90%.

To maintain a constant depth of ash below the fuel bed, the speed of the revolving helical grate which removes the ash is automatically controlled by a novel device.

West's Gas
IMPROVEMENT CO. LTD.

ALBION IRONWORKS · MILES PLATTING · MANCHESTER 10

Telephone: COLlyhurst 2961. Telegrams: Stoker, Manchester.

London Office: Columbia House, Aldwych, W.C.2. Phone: HOLborn 4108-9 Grams: Wesgasco, Estrand.

"PROGRESS MAINTAINED"

Dumbarton's newest Gasholder.
5 million cu. ft. — 4 lift — spiral guided.
Photographs taken February 1951, June 1951 and October 1951 respectively.

NEWTON CHAMBERS

& CO. LTD., THORNCLIFFE, Nr. SHEFFIELD.